NEW ENGLAND FARMER

DEVOTED TO AGRICULTURE, HORTICULTURE, AND KINDRED ARTS.

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R. P. EATON & CO., PUBLISHERS, OFFICE, 34 MERCHANTS' ROW. **MONTHLY.** SIMON BROWN, S. FLETCHER, } EDITORS.

JULY, 1871.

Hark! where the sweeping scythe now rips along;
Each sturdy mower, emulous and strong,
Whose writhing form meridian heat defies,
Bends o'er his work and every sinew tries,
Prostrates the waving treasure at his feet,
But spares the rising clover short and sweet.
Come, Health, come Jollity, light-footed, come!
Here hold your revels, and make this your home.
Bloomfield's Farmer's Boy.

JULY is the great hay-harvest month; and if not the richest, it is certainly one of the most important of our New England harvests. In this month the energies of the farmer are fully taxed. Care must still be extended to the corn and potato crops. Weeds will assume too much prominence if the cultivator and hoe are not frequently among them. The field turnip, beet and mangel wurzel crops will demand attention to thinning, weeding, and repeated stirring of the ground, in order to secure a rapid and lusty growth. The garden, also, which was prepared and planted with care, will claim daily attention if only a brief hour is devoted to it. If drought prevails, weeds are so much more hardy than most of our cultivated crops that they will flourish and crowd out their more delicate neighbors. If the season be a wet one, then weeds must be displaced in order to let in sun and air to the plants we are rearing.

Some of the early grains will ripen, and must receive their share of attention.

All these varied cares will rest upon the farmer during this month, in addition to the great leading interest, that of securing the hay crop in perfect condition.

The poetry which we have quoted at the head of this article was written long before machines for cutting grass by horse-power were known. Then six or eight men were required to cut as much grass in a day, as may be done by a single man and a pair of horses now. Besides, in using the machine, the grass would be spread, and thus save the labor of one or two persons more. And yet, here and there a man still clings to the old hand scythe,

"Bends o'er his work and every sinew tries."

The average crop of hay in New England is probably not more than one ton to the acre, and the average amount of land gone over by the hand scythe not more than one acre per day, of ten hours. If, therefore, while the farmer is going over his fields and cutting and curing the scanty crop of much less than

one ton to the acre, he will reflect upon the great difference in the profits of his labor which would result to him between fifteen hundred pounds and thirty hundred pounds of hay, he would undoubtedly resolve that he would, in the future, go over less land, and yet secure a larger amount of hay per acre.

The returns of the last census show the hay crop to have been about fourteen millions of tons, and at ten dollars a ton to give an aggregate of about one hundred and forty millions of dollars? This is substantial national wealth, something that gives the nation permanence and power. Unlike costly edifices, or anything else that costs much labor and is not productive, this crop, with our grains and other products of the farm, form the base of national progress and prosperity. The average per acre, might well be increased to one ton and a half, which would add forty millions annually to the wealth of the nation. Some of our best farms do this,—nearly all might.

Exacting as the labor of JULY is, it is still a month of general health and good feeling among farmers. There is something inspiring in the pleasant labor, and in seeing the bountiful crops so rapidly filling the empty barns with the fragrant products which are to sustain our domestic animals—and man, too, indirectly—when frozen fields and pinching cold compel them to rely upon man for shelter and subsistence.

The good old BLOOMFIELD, when telling his stories to the *Farmer's Boy*, felt the inspiration of the season which we have suggested, and invoked Health and Joy to come and "hold their revels and make this month their home."

And so, in the right sense, should it be to all, but especially so to the farmer that is full of life and joyous feeling. In the midst of all the garniture which the earth has put on, loading the air with rich perfume, and promising an abundance of food for man and beast, why should not his heart beat with gratitude and delight at the lavish fulness around him, and the great promise of future harvests! Let us, then, sing with the old poet,—

"Come to the scented clover fields,
At early dawn away;
The earth her generous bounty yields—
To the clover fields away;
The sun is painting now the hills
With its genial golden ray,
And the music of the singing rills
Is calling us away."

FARM WORK FOR JULY.

A great variety of work must be done in this month in order to secure a profit on what has already been done. It is poor policy to lay out more work than can be done seasonably and well. If the quantity of manure on hand will dress two or three acres more than has usually been under the hoe, that will require an extra amount of labor in July. It would be better to let the manure lie over, than to neglect the usual crops in order to get over the extra amount of land thus put under cultivation.

If we have reared trees, fruit or shade, it is poor economy to allow caterpillars or canker worms to destroy them. It costs time and money to set out and rear currant bushes, to start cabbage and tomato plants, to prepare the garden soil and sow a variety of seeds to bring vegetables for the kitchen table,—and their failure from after neglect would be a waste, not only of this cost, but of the money necessary to purchase them from some other persons, perhass in a poor condition. Viewed in this light, all will see that it is strict econom to take good care of whatever has been started, whether it be the grass, corn and potato crops, or the wholesome and almost indispensable fruits and vegetables, that ought to make up a considerable portion of our diet during the hot weather.

If from the force of circumstances the farm work is somewhat behind, it would be better economy to hire a few days' labor, than to allow the crops to suffer. A rank growth of weeds in the garden, or among the field crops, would soon absorb a considerable portion of their profit, beside filling the soil with seeds for future crops.

The hoeing is quite often neglected in order to strike into haying. The weeds are left, perhaps, to be cut up in cloudy weather, which may be indefinitely postponed. Then a clear day is as much better for hoeing as it is for haying. Weeds die quickly when stretched out in a hot sun. And that is not all. The ground being stirred to destroy the weeds, is put into condition to receive important benefits from the atmosphere, rains, and dews. The roots of the plants are, therefore, not only supplied with the nutriment they need, but they have around them a mellow soil in which to travel after it.

A quite common error is, to leave plants

too near together. They ought to be thinned out when small, but if that has been neglected, it is best to take them out later. We made an experiment with mangel wurzels, and it was estimated that double the number of pounds of roots grew where the plants stood twelve inches apart in the row, than where they stood ranging from four to nine inches apart. When the thinning is properly done, the hoeing can be accomplished in much less time than among thick-standing plants.

Another important item of work comes into this month,—that of gathering the early grain harvest. When this is fit to be cut,—which is when just leaving the milky state,—no delay should be suffered. Any delay will be attended with loss. If the weather is fair, the grain may ripen too far, and shell out in the harvesting. If the weather is cloudy and hot, there will be danger of rust, and birds prey upon the grain. If cut at the time we have suggested, the grain will be fairer and heavier, and the straw more valuable. These are facts which have been established by the most thorough experiments frequently made.

As the hot and dry weather reduces feed in the pastures, all the stock should be supplied with succulent food of some kind. If that is not at hand, then feed them with a little hay and grain before turned to pasture in the morning. In this way the cows will continue their usual flow of milk, and the young cattle and oxen keep in flesh and continue to grow. If these are checked, it will be in keeping with allowing weeds to grow among the crops. When the milk is once reduced, it is difficult to bring it up to the former standard again, even with high feeding. The animal functions have gone down as well as the milk, and must be brought up again before there will be an increase of the milk. The same operation takes place in the dry stock. It is hard even for young stock to recover from a stunt or stoppage of growth.

Stimulated by the pressing cares of July, the enterprising farmer is apt to spend too many hours in hard exacting labor. Cases have come to our knowledge where painful maladies have been contracted, and even death ensued, from a want of proper care. Work steadily, but moderately. Eat sparingly at night. Rinse the mouth and wash the wrists and hands before drinking much cold water.

BREAKING COLTS.

It requires patience and firmness to break in and tame the colt. Kindness has been found by experience to be more effectual than brute force to secure the confidence and subdue the untutored colt. It is the natural consequence of the legitimate control of the human mind over the brute instincts—the triumph of intellect over the animal passions. In a combat of physical force, the horse is stronger than man, and would be sure to triumph; but in a contest of mind he is easily subdued. It is this force of mind that gives man control over the horse and the whole animal kingdom.

Mind is omnipotent over the brute. Animal instincts recognize their dependence. Sympathy is not dumb. It speaks in the language of mutual confidence. We have only to refer to the modern art of training colts to verify the magic of mind over brute passions. For instance, the trainer often blindfolds the wild colt with heavy blankets, leaves him firmly fastened to a post, tormented in darkness, till he sweats profusely from terror-stricken excitement. The breaker at the appointed time quietly relieves him, and upon the gentle law of kindness brings him out of darkness into light. The terror-stricken colt instantly recognizes him as his deliverer from persecution, and follows him with the obedience and attachment of the dog. The trainer now becomes master of the situation, and can command him at all times.

The first proceeding in breaking the colt is to halter-break and bit him, to soften the mouth and supple the neck, so that he will carry his head in lofty style, to command attention and follow the line in a perfect curve with the body in motion. The head should not be left strained up long at one time before it is let down to rest. It prevents calloused jaws and leaves a more sensitive mouth. Much is accomplished in biting by suppling the neck with the hand. The head should be raised by hand exercise up and down, right and left, till the head can be placed in a bold position, and the under jaw will open and shut readily as it turns on its hinges for food. The body can be taught to move in straight or curved lines, go forward or back, and yield implicit obedience to the hand in every shape and form.

This process tames and subdues the colt, secures confidence in his master, and redeems him from fear. He can be put into harness and driven without a load till he will stop and go forward at the word of command, and turn to the right or left at the slightest indication of the hand. He soon becomes familiar with the harness, and the language of the trainer, and will be as gentle as a lamb. He will obey the commands of the driver when hitched to the wagon, the same as he has been taught to obey them in harness. When hitched to heavy loads, he should not be over-

weighted, nor suffered to draw more than two or three times at what he cannot move. Throw off the load and relieve him. It will encourage and make him true as steel.

If the green colt should contract the habit of pulling at the halter, he can be broken of the vicious habit by extending the tying rope to the halter, through a ring in the manger, and attaching the same to his hind foot. When the colt settles back to pull, the great strain comes upon the leg, and he will soon give up the practice of attempting to pull at the halter.

The most dangerous of all habits contracted by the horse is the pernicious practice of kicking in the harness. Should the wild, untutored colt turn out a kicker, he will have to be subdued by kicking straps or gearing, to guard against danger to life and limb from this vicious habit.

Several kicking straps have been invented that are simple and effective. One of the safe-guards consists of a rope attached to the hocks, playing through a pulley or ring, in the belly-girt, to correspond with the motion of each hind leg in the act of walking or trotting. It is utterly impossible for the horse to kick, or to move but one hind leg at the same time, which puts a veto upon running away, and confines the subject to a walk or trot. It will prove a sovereign remedy for kicking in harness.

The horse can be reclaimed from many vicious habits by the law of kindness. When George M. Patchen was in the zenith of his glory, and matched with the queen of trotters, Flora Temple, they chanced to change grooms. This was disgusting to the old hero of stallions. He fought the new-comer till they were forced to restore his old groom. When his old, cherished groom, who had slept in the stable for years, returned, the horse resumed his former quietude, and trotted that season some of his most celebrated races.—*Cor. West Rural.*

GALLED SHOULDERS ON HORSES.

There are few things more painful to look at than a poor horse wincing and baulking at every root which comes against the plough, while the ploughman is slashing him with the line and goading him into a passion, for his restiveness under the torture of a sore shoulder.

In using a new collar, it is best always to wet it thoroughly before you put it on the animal. A few hours' use will give it a set to the peculiar formation of the shoulder, which it will always keep. The same collar should always be used for the same horse. There is no worse practice than shifting gear upon a plantation. Every horse should have his own gear, and it should never be used for another, and every laborer should be held responsible for its condition. We prefer the common bark or shuck collar to any other kind.

If the shoulder should become galled, a pad of cotton may be put on so as to keep the pressure off the sore. A little neat's-foot oil applied every day will heal it up. It is best, however, when the first appearance of a bruise is noted, to apply spirits of turpentine. But it is better still, to prevent such mischief. We always keep at the stable a bottle of vinegar with a few spoonfuls of alum dissolved in it, and require the shoulders to be washed with it when the horse comes in at noon and night. If it be inconvenient to use this solution, a strong decoction of oak bark will answer a very good purpose. This astringent preparation toughens the shoulder and prevents the galling, and if a little oil should be applied when the galled part first appears, the animal can be worked and the sore healed perfectly in a little while.—*Rural Carolinian.*

WINTER OATS IN ILLINOIS.—I have a piece of winter oats, one and a half acres, sown last August, that commenced to head April 23d. Some of the stalks to-day (May 15th) measured one and one-half inches in circumference, three feet and eight inches in height, and still growing, with blades one and three-eighths inches in width. Many of the heads measure fifteen to sixteen inches in length, and are not yet fully developed. One stool counted one hundred and ten stalks, many of them having fifty and sixty. It is grown on ordinary compact, clay soil, rather wet, without fertilizers of any kind, nor has the land been manured during thirty years' cultivation—only by pasturing or laying out to the commons. The extreme cold weather this winter—thermometer 13° below zero—did not injure it in the least. Spring oats, sown March 22d on adjoining land, is about four inches high, and suffering much from the drought. I am using the winter oats for early feed.—*A. D., Du Quoin, Ill., in Rural New Yorker.*

DRESSING MUTTON.—Everybody, says the *World*, knows that the oil which lubricates wool is disagreeable to both taste and smell. In slitting and taking off the pelt, it is difficult to prevent a contact of the wool with the flesh along the lines where the skin is first severed, preparatory to being stripped off. The accomplished butcher cannot wholly prevent this contact, and he therefore very thoroughly scrubs the parts exposed with saleratus, dissolved in cold water, which wholly removes the disagreeable odor and flavor. The farmers, for a long time, were not aware of the necessity of such purgation, which should be applied at once, as soon as the pelt, by the greatest activity, can be removed. This done, the meat is as free from the taint of wool-oil as the meat of any other animal.

ON PRUNING APPLE TREES.

LD habits—and especially bad ones—cling to people with wonderful tenacity. So do old practices. Some persons cut their grass to this day with a hand scythe, who can well afford to own a mowing machine. Many farmers, keeping a large stock of cattle and horses, did this for several years after mowing machines were well tested, and boasted of the advantages of the hand scythe over the mower in point of economy!

But the most persistent and ruinous practice still prevails of *pruning apple trees in the spring*. The change, however, in this respect, has been very great, as not more than one-third as many persons do it now as formerly did. Why should any do it? The charitable answer would be, perhaps, because they are not aware of the injury caused in so doing. If this be so, it shows the importance of investigating every branch of farm labor for ourselves, instead of blindly following the practices of others.

A good deal has been said and written as to the *best* time to prune apple trees. Saying and writing, however, do not always convince, and the only thing that will is a careful study into the nature and habits of the tree, and actual experiments upon it. One of the largest orchardists in this region habitually pruned his trees in the spring; beginning in March and cutting until the work was finished. But he frequently complained of the condition of his trees. The land was occasionally cultivated and enriched, and care used in keeping off insects and in gathering the fruit. All this he did, and pruned in the spring, as his father and grandfather had done before him.

At length, upon complaining to a visitor who was passing through one of his orchards with him, and pointing out to him the discoloration of the bark, and decayed portions of many trees that ought to have been in the very prime of their vigor, the visitor replied that his theory was that spring pruning was the cause. The proprietor asked for the reasons of the visitor's theory. They are simply these, said the visitor:—"In the month of March, April and May, while the tree is starting its buds, blossoms and leaves into a vigorous growth, the sap-vessels are filled with sap on its way to the branches and twigs, to sustain this work. In the midst of this, you cut off the sap-vessels, and the sap, instead of mounting to the branches, oozes from the wounds made, and trickles down the outside bark of the tree."

Here, then, are two causes of injuring the tree. First, in weakening its power to perfect its blossoms, leaves and fruit, and secondly, in the effect of the wasted sap upon the health of the tree. The owner thought the reasons sound, put them into practice, and never prunes now in the spring.

It must have been noticed, we think, by every person who has passed through an orchard, that the bark on a portion of some of the trees has turned black. If he has cut into these places, he has found, also, that the discolored bark is dead through its entire thickness. In some cases it has become dry, and may be cleaved off from the tree.

When a tree is found affected in this way, the injury may always be traced to a wound inflicted upon it. On looking up, a long line of discolored bark may be seen, and sometimes extending from the place cut, several feet to the ground. Running against a tree with the plough in the spring, or striking it with the hub of the cart wheel, at that season, will have a similar effect, but will not prove so injurious as when the sap-vessels are cut apart.

The sap that escapes through a wound in an apple tree, seems to undergo a remarkable change on coming to the air. It soon becomes sharp, bitter, quite offensive to the taste, and in this condition proves fatal to many trees.

The best authorities in this country and in Europe agree in condemning the practice of pruning apple trees when the sap is in active motion. Most of the agricultural papers take

the same ground, but still the pernicious practice is continued by some persons.

A perfectly safe rule to be followed, is to prune when the "saw will gum up," as it is called. This takes place when the sap has visited the branches, passed through their laboratory, and is returning down the tree between the bark and the sap-wood, in a condition entirely different from what it was when it ascended to the tree. It comes down thickened, and of a sticky nature, which causes it to adhere to the saw so strongly as to make it necessary to wash it occasionally while using it.

By the middle of June, the sap in this form commences coming down and increases the diameter of the branches and trunk of the tree. It is safe, therefore, to prune from the middle of June to the middle of July. At the end of this time, a *second* growth commences, and pruning should be suspended until the leaves have fallen; after which it may be resumed, and continued through October and November with safety. This second growth may be distinctly seen all through the autumn, as the color of the leaves is a much lighter green than that of the first growth.

Where crops cover the ground, they may be injured by the falling limbs from the trees and the necessary walking about under them. Immediately after the falling of the leaf, therefore, is, upon the whole, the best time to prune. There is usually less hurry than in June, the weather is favorable, and no crops are liable to be injured by the work. The wounds contract and harden, so that the sap will not pass through them when it flows in the spring, and the wound is in a favorable condition for the healing process to be carried on by the descending, elaborated sap. The healing process is more rapid in June pruning, because the thickened sap returns so much sooner than it does after fall pruning. All wounds should be covered. Any paint will do, applied only to the wound, but gun shellac dissolved in alcohol is best.

For the New England Farmer.

SANDWICH ISLAND FARMING.

WAILUKU, MAUI, HAW. ISLES, April 11, 1871.

How many years I have been a subscriber for the NEW ENGLAND FARMER I cannot now say. It brings a home-feeling to me as few things do in this far-off corner of the world, where I have been ever since April, 1837, with the exception of a short visit home and one short stay in San Francisco.

It has sometimes occurred to me that possibly I might state a fact or two which would be useful to the readers of the FARMER, inasmuch as I was bred a farmer on the soil of the good old Bay State, and have all my life felt an interest in agriculture. But then I reflect that there have been immeasurable advances in agriculture, as well as other things, since I left the country; and here I have been cut off from those influences which give such a stimulus to mental effort—in a debilitating climate where our brains get roasted and our bile far too much developed.

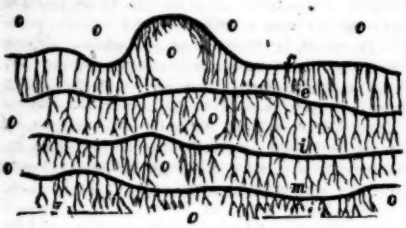
Then again, tropical culture is so unlike that of temperate zones that it seems to have nothing in common with it except main principles, which are everywhere the same. These considerations have hitherto prevented my writing altogether. But if we cannot have much in common with you, we still have a chance for observing some of the operations of nature which you, in your northern latitude, cannot enjoy. And although the main principles are as familiar to you as a, b, c, I crave pardon for giving an illustration or two of those principles which our stand-point enables us to observe.

Most of your readers are doubtless aware that the windward or northeast side of the Islands are rainy and can grow crops without irrigation. So also at two or three thousand feet elevation on the leeward sides. But near the shore of the southwest sides, and other places under their influence, plants are dependent almost entirely on the mountain streams for water; and where these streams are wanting, as for instance on Hawaii, there is no chance for crops near the lee shore, except occasional winter rains may bring them forward. It follows that irrigation is a main dependence in such situations where streams exist, and that water privileges are as valuable as land.

Long use has made us as familiar with irrigation as hoeing is to you; though we may not have learned all that may be learned about it. Some crops are much heavier where irrigated than where they depend on the rains. One reason undoubtedly is that they have both sun and water at the same time, while in rainy districts the sun is covered and the growth is stopped while the water is applied—one of the grand compensations which we often see in nature. I am aware that my good friends in the rainy districts may wince a little at this—if they see it—but while four or five tons of sugar per acre is a common yield with us at Wailuku and vicinity, we do not fear comparisons, and must maintain our point. But we will admit that the cost of irrigation very much increases the outgo on a crop. The first thing to be done is to cut a

ditch to lead the water from the main stream —itself a mountain torrent rushing down its rocky bed in the bottom of a deep valley or gulch.

The head, or dam, built up of boulders and stopped with rubbish, is often swept away by freshets and must be rebuilt before any more water can be had. This water course is led along the upper side of the field—all the land descends from the centre of the island—small branches are led from it at intervals of 40 to 100 feet or more across the fields in a descending direction, and from there again the water is led into shallow trenches which lie nearly on a level across the "lands," usually from four to six or eight feet apart into which the whole field is divided.



NOTE.—The above illustration of a plan for irrigation somewhat different from that described by our correspondent, is adapted to very steep declivities, which are liable to being washed, and where it would be dangerous to run branches down the hill at intervals of forty to one hundred feet distant, and take the water from them. Here the supply drain c is led along the declivity preserving only a slight fall. Very small outlets are made at but little distance apart, and the waste water is collected and again distributed, by the lower drains e, l, m. The uneven surface of the declivity is indicated by o.—ED.

In these trenches or on their sides, the cane is planted at various distances in the row—usually from one to three feet apart. The trenches are filled with water by opening and shutting them in succession with a sod or earth. The water is very soon absorbed by the earth and soaks under the ridges between the rows; but not coming to the surface of the ridges or banks, the weeds do not start there and the labor of weeding is materially abridged during the dry season, which is about eight months in the year. One hand will water well from one to three acres a day.

Young cane is watered about once a week, but after it is well established and will bear a more copious application, once in two weeks is sufficient. In the winter it is not often necessary to water at all.

There is one difficulty in watering some soils, viz: it causes them to become compact and impervious to the air, and so checks vegetation. Frequent stirring of the surface is necessary to prevent this, even though weeding may not be necessary. Long continued running of the water in one place is not admissible—unless a very small stream is allowed to trickle through a desperately dry spot for twelve hours or so.

Of the cultivation of Kalo—the great staple food of the Hawaiian race, and other plants peculiar to tropical culture, I will not now speak as I have already drawn this communication out too long. Yours truly,

EDWARD BAILEY.

For the New England Farmer.

TIME FOR CUTTING AND CURING HAY.

On looking over the articles published in the FARMER during the *past* year on this subject, I was struck (as I think others must have been) with the diversity of views and practices reported and recommended. These views and practices are very conflicting. It would seem as if *the* true method of curing hay was as far from being demonstrated as ever. Some are even now affirming that grass should be fully ripe, or the seed formed, before being cut for hay; others would cut when in full bloom, and others affirm that it should be cut even previous to blooming, if we would secure the greatest value of the hay crop.

None the less varied are the methods contended for or condemned in curing hay. One cuts when the grass is free from wet, wilts a *little* and mows away in a tight barn, and has excellent hay; another says he tried that method and *lost* his hay, it was worthless. Another mows in the afternoon, turns next day when the dew is off and gets it in during the afternoon. Another correspondent cannot carry out such a programme; it requires too too much *help*. Another thinks there is no real loss in exposing hay to the sun two or three days, while others are emphatic as to there being great loss from such sunning, and recommends its being put into cock when dry, kept a day or two, then opened and sunned previous to housing. We might go on multiplying diverse theories and practices, and have to come back at last to the question, When is the best time to cut grass, and what the proper method of curing it?

Let us look at what we may suppose to be some of the reasons why such diverse views prevail, and such diverging results are recorded.

Now as to the proper time for cutting grass for hay. The most careful experiments both in our country and in Europe seem to have demonstrated the fact, so far as evidence can demonstrate anything of this character, that grass cut when dry and in full bloom is, all things considered, in the best possible condition to make the best and most profitable hay. Circumstances may vary this general rule in an appreciable degree, but a doubt still lingers whether the variation contended for is really

admissible. It arises from the practice of some who keep cows for milk exclusively, and hence want the nearest possible approach to succulent food to secure the greatest quantity of milk. Experiments serve to show that grass cut before it blossoms will give the desired result; at the same time it is not clear that the loss in the quantity of hay obtained, and its unfitness for working animals, does not more than counterbalance the gain in the quantity of milk.

As to the practice of allowing grass to form the seed, it is needless to say much. The advocates for it are fast disappearing, and the practice will soon be among the things that were. There is no doubt that such hay (if it is proper to call it hay) is, as is claimed, less liable to loosen the bowels of working animals in warm weather than early cut grass, but the same may be said of dry brush and many other things.

After all, the proper curing of hay is where the greatest interest centres. A lack of judgment or want of thought often results in serious loss to hay makers. When I see statements made by reliable men of their practice in curing hay, each claiming to carry out the same details, and one reporting a satisfactory result, and another the reverse, I am satisfied there must have been some radical difference in the *conditions* under which these varying results were obtained. What these differing circumstances were, becomes an important question, especially to the man who failed to make good hay. When a person says he gets the best of hay from grass cut in full bloom, cured and housed the same day, I believe him; for I have done the same, and am knowing to its having been done by many others. A gentleman in New Bedford has practiced this method for more than a score of years with grass yielding over two tons per acre, without a single failure, and you, Messrs. Editors, testify to the same results as coming within your knowledge, in *remarks* appended to an article in last year's monthly, page 405.

It is a well known fact that rain (especially if it falls copiously) deprives standing grass of much of its good qualities, for a short time after; that is, grass cut immediately after a rain will not make as good and sweet hay as it would previous to the rain, or as it does after a day's bright sun. To this cause is to be attributed the poorer quality of hay in wet seasons.

The wet condition of the soil operates disadvantageously in curing hay, by reason of the vapors that arise on the sun's shining after a fall of rain.

Admitting these statements, have we not a clue to the reason why some fail of saving hay in the manner referred to? One person goes into his field, *thinks* his grass dry, and cuts it; another waits until he is certain it is so, and gets good hay from it. I think it is just at this point that the results diverge, and one has damaged, and the other good sweet hay.

If labor was not so costly, this question of curing hay would be shorn of much of its importance. But so long as farmers have to pay such large wages, it becomes them, if they hope to succeed in their calling, to seek for, and practice the least costly methods of doing their work that are consistent with its being well done.

I am quite sure it would be profitable to keep (if we have it) each season's straw and swale hay *over* to the next season, and mix it through the hay crop in sufficient quantities to preserve it without wilting it much, if any. I have saved *unwilted* clover by putting an equal quantity of oat straw with it. The cattle eat both greedily. I have also used rye straw that was much broken by the thrasher with like satisfactory results.

The truth is, farmers as a class are not as persistent in their investigations, nor as persevering in initiating new modes of doing their work, as are people in most other callings. They either discard entirely new methods, or if they attempt to practice them, too often fail to comply with all the conditions necessary for success, and decide prematurely against them.

March 10, 1871. K. O.

For the New England Farmer.

DRAINING ALWAYS BENEFICIAL.

MR. EDITOR:—I read with much satisfaction, in your issue of May 20th, the communication of Royal Smith of Millington, on the subject of "Drainage of Wet and Dry Land." Its intelligence and temper are equally admirable; and I am inclined to feel not a little gratification that I have been instrumental in eliciting such valuable practical information, as the letter alluded to contains. It is by the friction of minds such as that of Mr. Smith, that the genuine light of information is produced.

Your accomplished correspondent takes exception to the breadth of my doctrine of the efficacy of drainage, and pleasantly expresses doubt that the application of thorough drainage to what may be generally described as a dry, gritty soil, (as I understand it,) would be of any possible advantage. If not so, healthy experience and carefully observed results are not to be believed; otherwise the lapse of thirty years has so changed the effects of circumstances, long time ago recognized as very decided, as to render them utterly effete at the present day.

Thorough drainage will deepen and consolidate a loose or friable soil, and will deepen and render porous an indurated or heavy one. In either case increased temperature is an accompanying result; also increased depth of soil, furnishing plants with those conditions their healthy growth demands.

A soil saturated with water is semi-inert,

always. There can be no controversy concerning the propriety of draining in such instance.

A soil liable to injury from the slightest accession of drought is semi-effete; thorough drainage will improve it, profitably. And this is the point where my good friend Royal Smith's imputed controversy with me begins. There are very few light, arable soils, *undrained*, into which any farmer would be willing—even had he the power—to run a furrow of twelve inches in depth. By doing so he would cover up the active soil, and bring to the surface a barren subsoil that would in no way favor the chances of a good crop. Even should his seed survive and grow, it would do so under the most unfavorable condition; for it could not send its roots lower than the original depth of the furrow, where they would be drowned or starved according as the weather might be wet or dry. Cereals will penetrate the soil thirty inches in search of food and water where nature supplies them with the means. They have been known—as I have already said—to go down, perpendicularly, double that distance. And is it not the duty of the farmer to supply all those conditions to his crops that their healthy nature demands?

I am old enough to remember the advent of modern draining, and have heard the same objection implied by your able correspondent asserted with a positiveness utterly foreign to Mr. Smith's nature; but I was permitted to see many, very many, confutations of the theory—that dry land needed no draining—in the pleasing shapes of largely increased crops; in one particular instance mentioned in my old note-book, of one-third the second year after the drains had been made.

Had I present time, and you, Mr. Editor, room to spare, I could demonstrate, satisfactorily, I believe, the fact that dry lands, for crop cultivation, demand draining, and that the profit would pay for more than the labor and outlay. But these proofs are designed to constitute part of the details of a series of papers, I intend hereafter to inflict upon your good nature and suffrage.

But let me mention a very extreme instance of experiment, which I will refer to my friend, Mr. Smith's consideration as being somewhat illustrative of the power and effect of drainage. Forty years ago, when my farming was not done at the fireside, and when draining was in its modern infancy, and infested with any number of the crudest theories in its favor and in its opposition, a gentleman who was land steward to the Duke of Portland, on one of his estates in Ayrshire, Scotland, and a great enthusiast on the thorough draining side of the question, took it into his head to level and drain a sandy spot about three-quarters of an acre in extent, on the verge of a rabbit warren. There was hardly a sign of vegetation on the lot; only here and there a spear of some kind of sea-grass rose like a bayonet point, and was almost as sharp. The spot was fenced in to keep the sand from blowing over it, and parallel trenches, five feet deep, were dug and filled up two feet or more with brush wood. This was in the fall. Next spring the lot was harrowed and sown down with rape. This gave but a very feeble crop, which was ploughed in and vetches sown. This crop made also a very slim show, and was ploughed down in the late fall. The same processes were followed the second year, and the third the lot was laid down to rye and grass. Ten years after it was drained, being in the neighborhood, I thought of the experiment and visited the spot. It was at that time used as a bowling green; and as it had been much trodden upon, and partially mowed, I could form no adequate idea of its fertility. But one of the laborers took out sods from the surface at five different points, which showed an active soil varying from five to eight inches! It never had been manured or cultivated only as I have described. The gentleman who made the experiment told me that for rye and carrot cultivation the many thousand acres of barren sand along the coast, on which it lay could be profitably improved in the same way; and that in our opinion, there was no kind of land, situated so that it could be cultivated, that could not be profitably improved by drainage. I believed him then—and I do so now. A FIRESIDE FARMER.

MAKING MANURE OF MUCK.

A farmer in New Jersey sent a letter to J. Harris, Esq., of Rochester, N. Y. asking how to use muck to the best advantage, when to dig it, and what minerals, &c., to mix with it to remove the sourness and make it good manure, and enclosed $10 to pay for a reply. As Mr. H. is an editor, he returns the money, and prints the following reply, which for aught we know is just as valuable to the inquirer, and to thousands of other readers, as it would have been if each one had received written directions, and paid his ten dollars for the advice. After admitting that he had not used as much muck in the past as he intends to in the future, he says in the *American Agriculturist*:

"An average sample of air dried peat contains more than twice as much nitrogen as stable manure; and there can be no doubt of its value. The trouble is, that the plant food it contains is in a comparatively insoluble condition. It is 'sour,' but merely neutralizing the acids is not enough. The aim should be to decompose it by fermentation. Anything that will accomplish this will render the plant-food available. The first thing is to get rid of the water. Throw up the muck in June or

July, and turn it during the hot weather, in July or August. I would then put about a bushel of lime to twenty or twenty-five bushels of muck; and, in turning it over to mix the lime with it, would aim to make the heap as compact as possible; and before the fall rains set in, I would cover it with something to throw off the water. In the winter, draw this prepared muck to the yard, and mix it with the manure—say one load of muck to one load of manure. In my case, I should use some of the earliest-made manure and muck for root crops in May or June; and to get it in good condition, the heap should be turned, if possible, during the winter, and again in the spring; and if bone-dust, or blood, or woollen waste, or anything that would favor rapid decomposition, could be obtained, I would mix it with the heap a month or six weeks before using—the earlier the better."

"But," remarks the Deacon, "I thought lime would set free the ammonia. I know lime and ashes are good to mix with the muck when about to apply it directly to the land, but I never heard of mixing lime with muck that was to be afterwards mixed with stable manure."

Exactly. That is precisely where my plan differs from that generally recommended. I have no fear of the ammonia escaping from the heap. The more ammonia we can set free in the heap the better, provided it does not escape; and if muck enough is used, there is no sort of danger.

In my case, the bulk of the manure would be kept in the heap during the summer, and be drawn out on to the grass-land in the fall, to be ploughed under for corn or potatoes the next spring. A much larger proportion of muck could be used with the manure in this case.

MILKING---CARE OF COWS' TEATS.

I began to milk when I was only eight years old, which is 64 years ago, and there has not been more than two months in all of the sixty-four years but what I have every day had something to do with cows. And perhaps I know as much about cows as any other boy that is no older than I am.

I have had some experience with cows' cracked teats. At night I wash the teats with water (prefer to have it warm,) then with a brush, such as painters have, and a tin basin, have some pure hog's lard melted, and give the cracks a good greasing. Then I feed the cows with something that they like to eat, which diverts their attention. I commence stripping down the teats with my thumb and finger; I do not clasp my whole hand harshly round the teat, for by so doing the cracks will open and hurt the cow. If the cow is inclined to kick, do not whip her. I have long since found it better to pat them on their shoulders and card their cheeks, speaking gently to them, than to use all the goadsticks one can get hold of. It takes some longer to milk in this way, as I milk in a long quart milk measure, with one hand, going round and taking only a quart at a time out of each teat. When I get all the milk, I strip into one of my hands and apply it to the teats, leaving them quite soft and moist. Then I have a two-quart tin wash dish with a handle, with about a pint of flour in it, and press the dish up to the bag with the teats enclosed; shake the dish, and the flour will adhere to the cracks.

I have been told that those who tend grist-mills do not have their hands crack. A wash made of milk and molasses of equal parts is good to keep the teats moist while milking, and to be applied before the dish of flour is applied. To prevent the teats from cracking, I grease the inside of the cow's legs with lard where they rub against the teats when the cow is travelling. In using these prescriptions it don't affect the taste of milk or butter, as oil and some other ingredients used by some people do. The flour acts as a kind of paste on the cow's teats.

Now there is a good deal of fussing with cows, but what other animal can we any better afford to fuss over than the cow? We are deriving some benefit from the cow every day in the year on the farm. When she does not give milk she is breeding, and her manure is on the farm and not wasted on the highways as is that of oxen and horses.—*Daniel Foster, Augusta, in Maine Farmer.*

SPLINT IN HORSES.—A few years ago I bought a valuable horse that had a splint on each fore leg, believing that they could be removed. I was successful in the following treatment:—I took the Volatile Liniment of the U. S. Dispensatory, to which was added one drachm of oil of origanum; this was applied thoroughly twice a day, and followed by rubbing the splint with a round pine or bass wood stick, as hard as could be done without abrading the skin. This was continued several weeks, when we had the satisfaction of seeing the splints grow beautifully less and finally disappear entirely. In this case the splints had been on about a year, and had become quite large. I believe this treatment will cure most cases if continued a sufficient length of time.—*Dr. A. N. Braman, Brockport, N. Y., in Rural New Yorker.*

A BARN FOR 3200 CATTLE.—A farmer out West has 3200 cattle, and purposes to accommodate them all in one barn and stable building. The plan is a sixteen sided centre, with sixteen wings, three hundred and fifty feet long each, affording room for one hundred head of cattle on each side of the feeding floor, or two hundred in a wing—3200 cattle accommodated in the sixteen wings. The centre building will afford room for a steam

engine, corn sheller, mills for grinding, straw cutters, steam boxes, storing feed, etc. Corn cribs, with hopper bottoms, will be placed between these wings and the corn brought into the centre building by the engine with drag belt, and delivered to the corn sheller, the shelled corn being elevated to the story above, into a receiving bin, and drawn thence by spout to the mill below for grinding—all performed by the engine. A feeding car, filled from the steam box, will be run along the centre of each wing, and the cattle fed right and left srom it.—*West Rural.*

SHEARING SHEEP.

After remarking that sheep-shearing can be learned only by careful practice, the *Western Rural* says, if we were asked to give instructions to a new beginner, in as few words as possible, it would be about as follows:—Have only good shears, and keep them always in good order. Handle your sheep quietly—placing it in no uncomfortable positions, as it will very rarely struggle unless cramped or pained by awkward handling. Open the fleece on the side of either the belly or neck, as may come handiest after a few days' practice. We prefer the neck. Leave the back and upper part of the sides to be sheared last. Handle your sheep so that if it struggles it will interfere as little as possible with the fleece, which should always come off without breaking. Keep the shears flat, and cut slow enough to see where they are running; and leave no ground to be gone over the second time. Don't get nervous and hurried, but do your work only so fast as you can do it well. Speed is of secondary importance, and should never be sought at the expense of thorough workmanship. If at work with others, never let go your sheep until it is well out of the barn, as it will most likely frighten and make restless every other animal on the floor. Have patience, show mercy, and use common sense, and in a little while all the accomplishments of a first class sheep shearer will be at your command, and this is no mean distinction.

Hens in place of Dogs.—There is hardly a family that does not throw away enough table scraps to keep at least half a dozen hens, and many that keep a nuisance in the shape of a dog, that does no good, but costs more than a dozen good hens, complain that they cannot afford to keep hens. One dog in a neighborhood is generally a greater trouble to the neighbors than a flock of hens would be, for if hens are well fed at home they will rarely go away. But who ever saw a dog that was not a pest, running across the newly made garden, and sticking his nose into everything. Kill off the curs and give the food to the hens and you will find pleasure as well as profit in so doing. We wish there was a tax of one hundred dollars on every dog kept in the country. Those that are of value as watch dogs could be retained, while the host of snarling, dirty curs would give place to some more useful and less troublesome pet.—*Poultry Standard.*

Value of Eggs.—During the war many experiments were made by medical men and others interested in the subject, to see in how small compass the most nutriment could be got, and after all the experiments of physicians, physiologists, patent rights men, savans and investigators on scientific subjects, they all had to knock under (to use a phrase more expressive than vulgar) to an old hen, or a young one either—for it was found that an egg contained the greatest amount of nutriment or life-preserving food in the compass it occupies, of any other known substance. True there are essences of meats, etc., that by combination with other articles may be as powerful, but alone the egg is the most nutritious. There is more life-sustaining element in a single soft boiled egg than in twenty times its bulk in bread or food of that kind.—*Poultry Standard.*

EXTRACTS AND REPLIES.

YOUNG TURKEYS AND CHICKENS DYING.

I would like to inquire through your valuable paper in regard to a disease that has shown itself among my poultry. I had fourteen turkeys; they seemed very smart for a few days and then they could not stand on their legs; they would fall down and could not get up, and would die in an hour or two from the time they were first taken. I have lost a number of my turkeys and twenty chickens; an acquaintance, forty-eight chickens out of fifty, and another seven in one day, the same way. I have done everything I could, but still they die, and I can find no one who can tell me what ails them, or what to do for them. If you can't tell, will you please to ask some learned poulterers to reply, as I am very anxious to know what to do, as all my poultry are dying. A Subscriber.

Haverhill, Mass., May 25, 1871.

Remarks.—We cannot tell you what to do and therefore must ask some experienced poulterer to reply. Your description of the symptoms of the disease among your poultry is not sufficiently minute to enable us to determine what caused death. Several disorders terminate in loss of strength, or ability to stand, and death. For chicken cholera, alum water has been recommended, also mix their food with alum water for a day or two. Cinders from a blacksmith's anvil, pulverized and mixed with their feed is another remedy.

Mr. P. Welch, of Marlboro, Mass., wrote to the Farmer last year that he lost thirty young turkeys, about all he had. He gave one that could hardly stand a piece of saltpetre about the size of a pea, and the next day it was eating with the rest. He gave it to others with like result. A little gun powder may be mixed with their food.

On new farms or in new places on old farms, poultry is said to be generally healthy. It is sup-

posed that many of the disorders to which they are subject are caused by the excrements, &c., of their predecessors. The *People's Practical Poultry Book* goes so far as to say that "in the climate of this country there is no need of having any diseases among our domestic poultry, if proper care and judgment in the treatment of the same were manifested on the part of the breeder." A remark that will probably be received by most poultry breeders as based on a different experience in practical poultry raising from their own. Such declarations furnish a very unsatisfactory reply to inquiries like those of our correspondent and her neighbors, and a poor consolation for their losses and disappointments.

A CREAM-STRAINER THAT PREVENTS WHITE SPECS IN BUTTER.

A Cream Strainer or Crusher has been invented in this section that effectually prevents the occurrence of white specks in butter, and I think from several trials with and without it, that the amount of butter is increased by its use, though the buttermilk is impoverished. But I do not propose to advertise the invention.

CHEESE FLIES.

I wish to tell every cheese making woman, who has been troubled as I was two summers ago with these flies, which were not only a nuisance but a torment, that immediately after putting cobalt in the room where I kept my cheese, these flies were impotent,—I never saw another egg. Last summer you know the world was full of old and new things to trouble and destroy, but not an egg or a skipper did I see, for I kept my plates of cobalt wet with sweetened water all the time. There were plenty of flies; we killed as many cheese flies as the common house flies, but what cared I for the one more than the other as long as it could do me no harm. You will see I am not accustomed to writing for any one to read critically,—I never write only to friends who I am sure care more to hear from me than to criticise, and I would not now, only I did hope to tell some hard working woman something to do her real good.

Though I live on a farm, I am not a farmer's wife, but I hope some day to be. My husband is trying to earn money enough in another business, before he settles on a farm, to avoid being pinched, as many farmers are, for want of means. I am quite a farmer myself. I read all that is reported of the sayings and doings at farmers' conventions, but being a woman I must not attend them. I wish Dr. Nichol's lecture could have been reported in full. And, by the way, do you think his *Journal of Chemistry* would be interesting to me?

Johnson, Vt., 1871. MRS. A. M. B.

REMARKS.—With a wife thus interested in farming, —one who cares more for the discussions at agricultural conventions than for love stories,—we think your husband would be safe in making you a farmer's wife at once. You are entirely wrong in saying that you may not attend agricultural meetings because you are a woman. Women not only may attend, but they may take part in the exercises. An essay—and a sensible one too—on farm horses was read by one at a meeting in New York, not long since. Ladies have taken part in the talks of several farmers' clubs on dairy subjects, and on topics involving household management. Everywhere the presence of the ladies at these meetings is desired by the gentlemen, not simply as listeners, but as actors. We think you would be interested and benefited by reading the *Journal of Chemistry*, which is published at one dollar a year.

But whether you go to conventions or not, we warrant you a welcome, now and always, with a congregation of as many thousands as you will find hundreds at any farmers' meeting—with the NEW ENGLAND FARMER'S Club, which meets every week,—at the homes of the members, male and female.

THE COLORADO POTATO BUG.

This year I planted some of the Early Rose potatoes April 6th. They came up well and grew splendidly, and until last Sunday I never saw a field of potatoes that looked handsomer. Last Sunday I noticed some bugs on them, and now they are so numerous and ravenous that the vines must soon be stripped if the bugs are not checked. I enclose samples of them. What are they and what can I do to save my potatoes?

JOSEPH BARBER.

South Bend, Ind., May 15, 1871.

REMARKS.—On comparing the insects received with the cuts and description of the *Doryphora 10-lineata*, or Colorado potato-bug, in the *American Entomologist*, we have no hesitation in saying that this terrible scourge has reached your farm in its gradual advance to the East.

The bugs were somewhat crushed in the mail bags while on their way to Massachusetts, and for ought we know are the first specimens ever seen in New England; but unless their march is checked they will be here in force in the course of a few years. Prof. Walsh says that they move eastward at the rate of about fifty miles a year. He also remarks that, like Sherman's march to the sea, they crossed Illinois in separate columns, the southern portion of the grand army lagging considerably behind the northern columns. So far as is known, the Rocky Mountains were the original home of these creatures, where they fed on a wild species of potato peculiar to that region. A bug very closely resembling the Colorado bug has long been known in various parts of the country, but it does not meddle with potato vines. The two have been confounded by naturalists, but the *Entomologist* points out differences by which they may be distinguished.

Various means have been tried to destroy this potato bug, with only partial success. Various poisons have been used; hand-picking has been tried; they have been swept from the vines to be at once covered by a furrow of earth, and it is said that they may be destroyed by sweeping them from the vines on a hot day on to the hot earth. Persons have been poisoned by the fumes from the bugs thrown into hot water, &c. A Michigan correspondent of the *Western Rural* of June 3, after asking, Will potato-bugs kill sheep and lambs? says:—

The above inquiry is suggested by finding a few days since, several lambs and one old sheep dead,

and another old sheep nearly dead, upon a piece of ground where potatoes were planted last year, but which were so completely destroyed by the bugs as not to be worth digging. The sheep so nearly dead was brought to the house and examined, when several potato bugs were found upon it. These were picked off, a mild cathartic administered, when it soon recovered, and is now apparently well. The rest of the flock were immediately driven to another field, since which no deaths have occurred, notwithstanding several lambs have been dropped. No other cause can be assigned, as the sheep were all apparently healthy, and in good condition.

My theory is, that as the sheep were troubled somewhat with ticks, they would, while biting them, become poisoned by the bugs which swarmed upon them.

At all events, if potato bugs will not kill sheep, they are bound, from present indications, to kill all the potatoes planted this year, as they have already made their appearance in great numbers upon them. Would it not be well for those who have planted many potatoes, to plant corn between the hills, as, in this way, one crop at least may be saved, and the corn will not materially interfere with the potatoes, should the bugs spare them?

CANNING FRESH MEAT.

It may be a convenience to some families to know that *meat* as well as fruit can be kept perfectly sweet by canning. When the hot days of March came, we had something like one hundred pounds of meat that we were wishing to keep till eaten fresh, by our own family of eight persons. It was pork, beef and mutton, in all common shapes, i. e., steak, roasts, spare-ribs, boilers, frys, &c. Having several empty fruit cans, my wife cut up the steak in slices and partially cooked it, and sealed it up as she would fruit. The other pieces were treated in a similar manner, after taking out the bones and cutting small enough to get into the cans. After two months we are now using the meat as we have occasion, and it is as perfectly sweet as it ever was! We find it a very great convenience, especially when we want to get a meat meal at short notice. Mrs. N. carried a bit of steak to a convalescent sick neighbor, a few days since, who pronounced it the very best she ever ate.

It is so warm during the summer that meat can not be kept sweet but a few hours, except in an ice house, (which few farmers have.) Their cellars are often too warm to admit of "corning" meat; and to buy fresh of the peddlers every other day at a great profit for small pieces, is too expensive. If meat can always be "canned" so easily as our experiment indicates, farmers can buy in larger quantities, and at cheaper rates, or kill a pig, calf, or lamb, and "can" it all so as to have fresh meat much more, and salt ham and pork and beef much less of the time, at no less pleasure to the palate, if not greater benefit to their health. R. N.

Randolph, Vt., May 25, 1871.

PEARS ON STIFF SOIL.—ROME BEAUTY APPLE.—CORN IN VIRGINIA.

How is it all Pomological writers say the pear requires a stiff soil? I imagine the best pear orchard this side of the Rocky Mountains, is within three miles of the city of Norfolk. I furnished two years since, to a gentleman near Yorktown, Va., 1000 trees. They were put in pure sandy ground, in fair order. Their growth is astonishing. Apples and peaches bid fair to be abundant. Fig bushes killed to the ground last winter, for the first time for many years.

I distributed some years since, quite extensively through New England, grafts of the Rome Beauty apple, grown extensively in O. and S. W. Would like to hear from some how they answer.

I came across a couple of apple trees in the valley of Virginia, a few years since, which I liked much. They bear every year, are quite large, mild, sub-acid, and quite good in the fall. I have eaten them in May when very fine. Would distribute a few grafts next spring to the right sort of people. I planted some of Moore's sweet corn this spring; have some now in silk. Can you beat that? S. CLARK.

Hick's Wharf, Va., May 27, 1871.

REMARKS.—No, sir, can't beat that; but could have beaten you out and out in cold weather, hot weather or a sharp drought, a few days ago.

Downing recommends as the best soil for the pear tree "a strong loam of moderate depth, on a dry subsoil." Baker says "those lands which part with their moisture readily are not suitable, neither is one which contains an excess of water." Cole remarks that "the pear requires a deep, friable loam, rather moist, but neither wet nor dry, with a rather dry subsoil, as its roots run deep; yet a porous subsoil is not good; a hard pan is preferable. A deep yellow loam is excellent. The largest natural trees are on strong, moist soil."

Pear trees will often grow rapidly on light sandy soil in New England, but do not bear as well nor live as long as when on strong loam or stiffer soil.

For the New England Farmer.

THE GARDEN IN JULY.

Go with me, kind reader, and let us make a slight examination of a friend's vegetable and fruit garden. It is not a professional or amateur's, but only a plain farmer's garden. Look at those early potatoes! The owner has taken several messes from them already for his dinner table. How did he manage to obtain potatoes so early? He merely took some extra pains to sprout, plant and care for them. Then here are peas, which he has been enjoying for several weeks; and there are string beans, too, with corn that looks as if he might have succotash soon; cucumbers to substitute for lettuce, radishes, &c., of which he has had an abundance; pole beans in the blossom, with some set; a bed of asparagus, which looks as if it had given the family a good supply; sweet potatoes that look as if in the early fall they might rival the productions of a more southern and warmer climate; peas that have gone by and later ones coming on; egg plants, producing a fruit which is a substitute for eggs during the annual vacation of the biddies; with a large variety of other vegetables, which we must not stop to mention, all thrifty and promising. All these have been thoroughly cultivated, notwithstanding the demands of the other farm work, and yet this man can hardly see where he has been obliged to employ any time that ought to have been given to other farm crops. But he has not yet got through with planting succession crops, for he is about to put in more sweet corn, cu-

cumbers for pickles, turnips, &c., that yet have time to mature. This, with strawberries, salads, &c., he is enabled to produce from his garden, from having highly fertilized, deeply worked and thoroughly fined the soil, to start with, and then planting in season, watering with liquid manure, when necessary, and doing everything at the proper time and in its season. Go thou and do likewise.

ASPARAGUS.—The bed has given us a good supply, and now we should compensate it by some stimulant like superphosphate or other fertilizer worked in among the roots, or cover with compost manure an inch or two thick, after cleaning off weeds, &c.

BEANS.—Gather and use as they fill, saving a few of the earliest to go to seed or ripen. Early varieties may be planted for a late crop of string; they will be fine for pickles or for canning.

BEETS.—Early varieties may yet be planted for winter use. Any surplus will be good for greens or the cows.

BLACKBERRIES.—As the new shoots grow, tie them to the trellis or to stakes. Shorten in the main stem and branches to induce the forming of fruit buds; pull up small shoots, unless you desire to multiply them. Carefully secure any plants and branches heavily laden with fruit.

CABBAGE AND CAULIFOWERS may still be planted out for late crops; there is little danger of providing these in too great abundance, as any not needed for family supply, are readily disposed of to the stock.

CELERY.—Transplant till the last of the month for late crop. Water and hoe frequently; you can scarcely apply too much water, if the drainage is good. Upon rapid growth depends the excellence of celery.

CORN.—Plant Crosby's Early, or some other equally good early, for late use, drying, &c.

CUCUMBERS may be planted for pickles. Hoe and water till the plants cover the ground; guard against insects. Save from the early crop for seed. Seed five or six years old, where carefully preserved, is best for planting, growing a larger proportion of fruit to vines. Cider vinegar is *best* for pickling.

CURRANTS.—These furnish a most excellent acid for the system and may be eaten freely with good effect, either right from the bush or as a dessert. Make jelly, preserves and wine from the ripe fruit. When the fruit is gathered is a good time to prune and thin out. I have never been troubled with the currant worm and do not know from experience what it is. The borer, aphis and scale need looking after to destroy them.

EGG PLANTS.—Forward them by frequent hoeing, with application of liquid manure.

ENDIVES.—Sow seed the first of the month. Sow in drills, and transplant to 12 inches apart in rich soil; hoe often.

GOOSEBERRIES.—Keep the ground around and under the bushes mulched with anything to shade the surface, to prevent mildew and induce to larger sized fruit.

GRAPES.—Thin out the bunches, as needed. The severe summer pruning and pinching that a few years since were recommended, have been much modified by experienced cultivators. A certain amount of pinching-in is to be recommended, as also thinning, to grow larger fruit.

HERBS.—The best mode is to gather when in blossom, and cure and dry in the shade or house.

INSECTS.—The gardener will be continually looking out for and destroying all injurious ones, as they are destructive alike to fruits and vegetables; any means of destruction are commendable.

MANURE all backward plants by liquid manure or top-dressing. If you only manage right you can drive a plant as well as you can a pig.

MELONS.—Cultivate same as cucumbers. A flat stone or board under specimens will induce earlier, more even ripening, and they will not have that earth taste to such an extent.

ONIONS.—Weed and cultivate without drawing the dirt around the bulbs. Should the maggot trouble them, push away the dirt a little and try pouring on boiling water. Seed may be sown thickly in good soil to provide sets for spring planting.

PEAS.—If late or autumn peas are desired or those free of bugs for seed, they may be planted now, and if well cared for they will mature a crop, although more likely to mildew.

POTATOES.—Those early ones will now be ripe and right for the table; dig, and plant the ground to other crops which mature later in the season.

RASPBERRIES.—Cut down old canes as soon as the fruit is gone, and thin out the new ones as may be desirable. Three or four canes to a stool is enough. Keep well cultivated.

RHUBARB.—The leaf stems may be skinned and dried, same as apples, and will make a good substitute where apples and fruit are scarce. Do not cut too close; keep down seed stalks.

SEEDS.—Pay particular attention to growing, selecting and saving seed of all kinds, as they ripen. Gather before any begin to scatter or waste, and let them mature in safety.

STRAWBERRIES.—After the bearing is over, carefully weed, cut the runners and hoe. Apply some fertilizer and work it in as you hoe.

TOMATOES.—Do not let the plants suffer for want of water. Trained to stakes with a single stem, with side shoots pinched in, some claim as the best way. Transplanting to fill vacancies is still in order; this will be found a good remedy to repair damages of insects, defects in seeds, &c.

WEEDS are the bane of all good culture; they are neither useful, generally, nor ornamental. A clean garden, destitute of weeds,

plants growing freely and luxuriantly is a sight to gladden the eye of all careful gardeners.

W. H. WHITE.

South Windsor, Conn., 1871.

For the New England Farmer.

FLOWER GARDENING.

BEDDING OUT PLANTS.

Every day at this season finds us at work in the garden, planting out bedding out plants, sowing annuals and perennials, watering those that are drying up in the heat of these rainless days. But not until the sun has fallen below the hills, do we care to exercise our strength in carrying water for his lordship, the Sun, to drink up, but will do it willingly for the bright, beauteous flowers which are so dear to our hearts; and if tepid, warm water is given to them at night fall, they gratefully drink it up, and grow much more rapidly for it.

English books on *gardening* tell us that too much watering injures the plants; that the roots will not strike down deep in search of moisture if it is daily given on the surface. This advice applies to their country, but not to ours, where the summers are so dry and hot, and rains fall so rarely when compared to their misty, moisty island, bedewed with fogs; but of this anon.

Bedding out plants yearly increase in popularity, on account of the trouble involved in the culture of annuals. They can be purchased cheaply at many greenhouses, and now that "Uncle Sam" allows us such facilities in receiving them through his post bags, the florists are at our own doors, and two to five dollars will give a fine supply of plants. The last named sum will stock a small garden with verbenas, geraniums, heliotropes, feverfews, &c. Read the catalogues for yourselves, fair friends, and see the bounteous and beautiful supply that they offer for your approval.

Bedding out plants are dwellers in the forcing houses during the winter, and are transplanted into the garden in summer, where they supply us with a profusion of lovely, fragrant and brilliant flowers until the frost regains its sway; but some of them are greenhouse perennials, like the verbena. Their treatment is very simple, and compared with the pleasure they give to flower-lovers, they ask but little attention at our hands. It is not well to plant them out until frosts and east winds have given us their last call, for both of them are very injurious to their tender growth. In most parts of New England the fore part of June is early enough. If bedded out sooner they will not make any growth, and it injures them when in a healthy condition, to be thus retarded by cold nights and chilling winds.

When the bright summer-like days of May appear, we greatly desire to clear the windows of their floral treasure and empty the hot-bed of its contents, but we must cast aside all such ideas, knowing that it is not well for the plants. But when "settled weather," as the farmers style it, has really come, then we hasten to deposit our darlings in the fresh beds which have been duly enriched and spaded and raked over for their reception. We select a day that is showery, or an evening after a shower, and dressed for the work, in dark calico, thick boots and a long apron to shield us from dirt, we commence operations.

The ball of earth in the pot, is thoroughly wet and a knife is run around its edges, then the pot is turned bottom upwards, over the left hand, and a few raps upon the pot will leave it in the hand. Trim off a little of the fibrous roots on the outside and set the ball containing the roots into the earth, planting it as tightly as possible. There lies the secret of successful transplanting. Water the plant well, and unless the following day is very warm they will not require to be shaded; but if the roots were much broken up, it is well to cover with newspapers, or the large leaves of the rhubarb plant. Water freely when the season is dry, and if liquid manure or guano water can be given once a week, their growth and bloom will be much finer.

The Zonale Geraniums are very desirable for bedding out, on account of their plentiful clusters of beautifully colored flowers—from the brightest, most fiery scarlet to the rosiest pink, the lightest blush and the purest white. A large bed or mound, composed entirely of Zonale Geraniums, will present a gorgeous display of flowers until the frost cuts them down.

From the older varieties many new and beautiful varieties have been produced by seeds and the named sorts are very numerous. Among them we should select Gen. Grant, a very free bloomer, and of a most vivid scarlet. This variety originated in Ohio, and its flower trusses are enormous, almost covering the plant with their gorgeous bloom. *Louis Veuillot*, intense scarlet, extra fine, cheerful, bright cherry, splendid flower. Cybaister, scarlet nosegay. Gen. Sheridan, rich scarlet flowers of perfect form. *Gloire de Corbenay*, bright color, lightly tinged with white. Herald of Spring,—flowers a deep cherry color, tinted with orange, very large, and the leaves have a broad zone, perfectly defined. Blue Bells is a monthly, with large clusters of magenta pink flowers. *Marie L'Abbe*, flower white, with pink centre. Madame Werle, white clusters of flowers, spotted with pink. Incomparable, salmon-colored flowers, striped with white, leaves beautifully zoned with chocolate brown. Bicolor, deep salmon-color, edged with white. *Madam Gueffier*, vermilion, edged with flesh color. Christine, rich rosy pink. Countess de Morella, very beautiful scarlet flowers. Magawisca, delicate rose color, white margin and eye. Mrs. Austin, salmon, edged with blush, large flowers

and fine truss, foliaged beautifully, zoned with dark chocolate. Polar Star, the purest white and very large cluster. Rose Rendatler, brightest rose, spotted with white, very beautiful. Superba, bright scarlet, with white eye. Victoria, violet crimson, white centre. All of these varieties are particularly choice, and will of themselves compose a brilliant garden of unnumbered dyes. Verbenas are easily raised from seeds, and they excel in rapidity of growth, and profusion of flowers those that are obtained from cuttings; but one is not as sure of choice and brilliant coloring, so it is always well to supply oneself with both seedlings and plants. The flowers raised from seedlings are much more fragrant than those produced from cuttings. In a natural state the verbena is usually fragrant, but after having been rooted again and again, it loses this attribute. The more delicate colors are always the most fragrant. Properly cultivated, seedlings will give better satisfaction than plants. They will not grow on the same locality, year after year; if so planted, they will be liable to attack from the root lice, which soon kill the plant. They require a sandy soil,—two or three inches of pure sand scattered over the surface of the bed will keep the heat of the sun, and make them bloom profusely. Soap suds given once a week will also increase their growth. They seed very abundantly if not far removed from the mother plant, and in mild climates will often sow themselves if straw or hemlock boughs are thrown over the bed in the autumn. The tiny leaves, when they first start, resemble weeds, and they should not be touched until the rough serrated leaves of the plant have developed themselves.

Among all the numerous varieties of bedding out plants upon which we can always depend for a gay and brilliant garden, the verbena takes first rank. Every year sees a great increase in new varieties, which excel in size and brilliancy and in variety of coloring all that have been produced in former years. They are all raised from seed, and Peter Henderson grows thirty thousand plants yearly, from which he selects one in a thousand to present to the trade as No. 1 plants. Among those that were produced last season are Annie, pure white, striped with crimson; Black Bedder, very dark maroon; Conspicua, ruby scarlet, white eyes; Cupid, large white, tinted with pink; Distinction, solferino, dark eye; Fire Cloud, fiery scarlet, yellow eye; Formosa, large pink, white eye; Monarch, large bright scarlet; Punctata, spotted and striped with carmine; Ruth, lilac blue; Sensation, waxy white, carmine eye; Snow Storm, purest white; Tricolor, carmine, crimson and orange; Unique, white carmine spot.

All these varieties are distinctive and beautiful,—some of the separate flowers measure an inch in diameter, and the whole truss or cluster is enormous. For many years the culture of the verbena has been a *specialty* with Mr. Henderson, and the plants he selects are sure to excel in profuse flowering and great beauty of coloring.

Verbenas will grow and bloom with very little care, but they flourish much better if their desires are attended to. In August, cuttings must be struck for the winter, and small pots can be sunk in the beds, and the thrifty branches pinned into them with hair pins. They will not bloom in winter unless plenty of light and air is afforded them, and they do not require a great supply of water,—often one fails to grow them on account of watering too freely. Green lice—*aphides*—are their great pest, but they can be brushed off with a chicken wing, or the plants can be placed under a tub with a saucer of hot coals and some tobacco and smoked. Lice cannot live where plants are daily showered. The root lice are more formidable enemies, and if they once take possession of your plants, it is best to pull them up and throw them away. If the plant is very valuable it may be saved by taking it up and washing all the roots in tepid soap suds. The lice fasten themselves directly about the stem and suck out its life. Fresh soil rarely engenders these plagues. It requires much care and daily attention to cultivate a beautiful garden. No farmer grows a crop of corn or cabbages without some labor. Since it was decreed that man should eat his bread by the sweat of his brow, toil and care have been required of him, if he would make his land support him. So it is with flowers,—it does not do to plant out our flowers and then let them alone; nor to care for them assiduously one week and neglect them the next. They demand of us daily attention, if we would have them grow in grace and beauty. In the drought of summer they must have water, or they will give you no flowers,—it must be given them nightly or they will dry up. Irrigation is quite as essential upon many a New England farm and garden, as it is upon the fruitful fields of Utah. We should raise much larger crops, much finer fruits and a much more abundant supply of flowers, could we pull up the sluice way at our door and let the refreshing, cooling waters flow among our crops and flower beds, as do the Mormons. The time is coming when more attention will be paid to this method of fertilizing. Last summer's intense heat showed us its necessity, and this season threatens to teach us another lesson. So, fair friends, let us set hogsheads under the eaves to catch the rain when it will condescend to fall, and let us give the thirsty flowers a good drink of it every nightfall. Tubs of water can be drawn from the aqueducts or pumps every morning and allowed to warm in the sun, and when it has gone to rest we can plentifully besprinkle the lovely flowers which so fully repay us for all the toil and care we give them. S. O. J.

EFFECT OF COMMERCIAL FERTILIZERS.

DOES THEIR USE TEND TO THE IMPOVERISHMENT OF THE SOIL?

I have a piece of ground of light soil that will produce only twenty bushels of potatoes, but by using phosphate I get seventy bushels. Does the phosphate alone make the fifty bushels, or does it serve to draw enough from the latent properties of the soil to make the crop? and if so, is not my land poorer for it? READER.

REMARKS.—The questions of our correspondent are somewhat searching ones. The last two questions may be answered by the monosyllable, Yes. That brief reply, however, would not give a clear and satisfactory solution of the case. The application of the phosphate may be explained by a homely illustration. In drawing a load, if the whip is applied to the horse, the load is moved faster, but the power of the horse is sooner exhausted. So if a person uses a stimulant, he may accomplish more labor of brain, or of muscles and sinews, for a short period, than he could have done without it; but the power of brain and the other organs would sooner yield to the pressure.

It was *not*, we conceive, "the phosphate alone which made the fifty bushels of potatoes," but an accelerated action, caused by the phosphate, of all the elements in the soil which go to make up the potato. These elements *were* in the soil, in small degree perhaps, and dormant for want of some stimulating cause. They were not sufficient in quantity, or vigor, or were not sufficiently comminuted and mingled with each other to enable them to act in conjunction *with the elements of the atmosphere*, and so the crop was light.

"The successful growth of a crop or a field, proves that it has found in the air and in the soil the atmospheric and mineral constituents of its food in the proportions suitable for its nourishment. The failure of a crop on the same field, indicates that in the soil there is something wanting which is necessary for its growth. In case of failure, therefore, we must look to the ground; the atmosphere is always ready to supply its portion of plant food." It is "nearly invariable in its composition at all times and over all parts of the earth's surface. Its power of feeding crops has, therefore, a natural limit, which cannot be increased by art.

"The soil, on the other hand, is very variable in composition and quality, and may be enriched and improved, or deteriorated and exhausted."

A soil may possess all the elements for plant nutrition and still not be a prolific one. This may come from several causes. First,

From too Dry a Condition of the Soil.

If rain has been withheld for a long time, and evaporation excessive, there would be little action in the soil, and crops would fail. If it were deep and rich in nitrogenous matter, it would hold out longer than a thin and poor soil, but would finally cease to sustain plants as action in it grew less and less.

The Effect of too much Water.

The effect of a superabundance of water would be much the same as a want of it; each would prevent action in the soil, and hence no nutrition would be supplied to the plants standing in it. The same conditions would affect animal life in a similar way. Water and air are indispensable to man, but if the former were present with him in great excess, or the latter were withdrawn, his vital functions would soon cease, and he would die. The same principles seem to us to be involved in plant and animal life.

Again, very much will depend upon the *mechanical* condition of the soil. The question naturally arises, Was the land planted with potatoes in the same condition, with the exception of the addition of the phosphate? One hundred pounds of a fertilizer applied to a soil that is fine would probably be as efficacious as 200 or 300 pounds on a coarse lumpy soil. Baron Liebig explains this point so clearly that we give his words as follows:

"The *rapidity* with which a substance, such as a piece of sugar, is dissolved by a fluid, is in proportion to its state of *division*. By pulverization its surface is increased, and consequently the number of points augmented, which, in a given time, are brought in contact with the dissolving fluid. In all chemical processes of this kind, the action proceeds from the surface. An element of food in the soil acts by its surface, the portion beneath the surface is inactive, because it cannot be dissolved. Its effect, within a given time, increases with the quantity taken up by the plant during that time. Fifty pounds of bones may in one year produce, according to their state of division, the same effect as one, two or three hundred pounds coarsely ground. In the latter state it is by no means inefficient; but to act, that is, to become soluble, it requires a longer time. The effect produced by it is smaller, but it continues longer.

"To understand correctly the effect of the soil and its constituents on vegetation, we must keep steadily in view the fact, that the elements of food present in it always possess within themselves active powers, but *they are not always in condition to exert this power.* They are ready to enter into cir-

culation, like a maiden to dance, but a partner is necessary."

By the foregoing, we think our correspondent may see pretty clearly,—what he seems to anticipate in the phraseology of his question,—that it *is* possible to render his land less fertile by the use of stimulants. Cases of this kind have been often recorded, where phosphates, guano, and other stimulating matter had been long applied, until nearly all action ceased in the soil, and it refused to bring a crop.

We have always been of the opinion that the moderate use of a pure "commercial fertilizer," sold at a fair price, could be made economical to most farmers. But it *must be* in connection with the common manures of the farm, good muck, and an abundance of other vegetable matter, in order to keep an ample bed of humus in which the concentrated manures may act.

It is said that lands in some portions of the Southern States have greatly degenerated in the use of concentrated manures. The system there of keeping stock does not admit of the saving of much manure; even if it did, the amount of stock kept is so small that all their manure would be of little account on their large plantations. Under these circumstances they resorted to the natural beds of fertilizers found in various portions of the country, and used it until the soil is depleted, inactive, dead. It must now lie barren, until Nature's processes impart life and vigor to it, or the hand of man turns it up to the light and air, and with clover, millet, or an abundance of other vegetable matter mingled with the soil, sets it into action again for the production of paying crops.

Now we come to the question, Is there not danger of adopting a system by which the ground must gradually lose the conditions of its fertility, by which it must be impoverished and exhausted? We think there is such danger. Our main resources must be within ourselves. Help, we can obtain, incidentally. So far, however, we have not managed our own means with that system and economy which would give us more ample returns. What manures we already have are capable of producing a two or four-fold action, by using them in a finer condition. So that they will mingle intimately with a fine soil, where the roots of plants may rove at will through them, and find all the supplies they need for a vigorous and perfect growth.

Let us, then, gather up every possible material that can be converted into manure, and preserve it, until wanted for use, so as to retain all its qualities. Then work it over into a fine mass by the use of muck, loam or such other means as each one's circumstances will permit. Let us do this, and the seeming necessity of employing large quantities of commercial fertilizers will gradually disappear.

VISITING BY FARMERS.

We have often advised farmers to visit each other more frequently and more socially. We believe that with mechanics in Europe it is a custom, if not a requisite for the completion of a trade, for the journeyman on the expiration of his apprenticeship to spend some years as a "tramp," in travelling about and working in various shops to learn the ways in which work is done in different establishments. The young farmer who "works round" a few years may enjoy similar advantages. But after one buys a farm, the cares of business and the press of labor are often deemed a sufficient excuse for remaining at home, and many farmers would as soon think of planning an expedition to the north pole, as of taking a day's vacation to see what their neighbors were doing and learning how they do it. Occasionally, however, a farmer gets loose, and enjoys the examination of the stock, implements, and management of others so well that we think the number of visiting farmers is yearly increasing.

A correspondent of the *Maine Farmer* is writing for that paper a series of articles entitled "A Farmer's Vacation," in which we have some very pleasant views of the farms and homes he visited. In his last article he describes two farms in Middlesex County, Mass.; that of the senior Editor of this paper, and that of Sturtevant Brothers, South Framingham. As Mr. Brown is busy with his spring's work just now, the junior takes advantage of his absence from the office in the city to copy the following description of his farm by the writer alluded to, who gives the initials "Z. A. G."

Farm of Gov. Brown.

My first visit was to the farm occupied and conducted by the Hon. Simon Brown, well known to the farmers of Maine as the senior editor of the NEW ENGLAND FARMER. His genial editorials have cheered many a farmer's home, and his advice has been accepted as the highest authority. His farm is situated in the historic town of Concord, and embraces the field on which the militia assembled to resist the approaches of the British. It consists of one hundred acres, and is pleasantly located on the westerly bank of the Concord river, sloping gently towards the low meadows which for a long distance border the river. The snow lay deep on the ground at the time of my visit, so

that the visit was more to the barns and the editor and his family, than to the farm.

The buildings are pleasantly situated and conveniently arranged at a little distance back from the street, and are surrounded by a well kept lawn interspersed here and there with shade trees. The flower and fruit garden is located in rear of the lawn, and forms a beautiful background to its velvety greenness. Still further back is a fine young orchard, set and tended by the proprietor's own hands, and showing a uniformity of growth and appearance seldom excelled. Everything about the premises, whether on the farm or in the barns and outbuildings, showed the most perfect cleanliness and order. A portion of the farm has but recently been purchased, and has not yet been brought up to that state of productiveness which will be realized in the future.

In the stables were a dozen cows, a part of them Ayrshires, and the others Jersey; five horses belonging to the estate, and thirteen boarders. The feed for this stock was English hay, corn fodder, and oat straw cut green and unthreshed. This is run through a feed cutter propelled by horse power, mixed, wet up, and a small quantity of corn meal and shorts worked in with it. This is prepared before wanted for use, left in a mass to soften for at least twelve hours before any is used. The feed is believed to be much improved by this preparation, and stock thrive upon it much better than upon dry feed. Connected with the stables are the hen house and the boiler room for cooking the feed for swine. These are characterized by the same order and neatness elsewhere manifested. Some fine specimens of White Chester pigs were in the cellar upon the manure—kept to grow, as the proprietor said, and not to work. If that were the sole object, why they were kept upon the manure from the stables, unless to tread it down, I could not see. In an adjoining apartment was a generous pile of mangel wurtzel beets, grown for the pigs and cows. These are considered very excellent feed, and are thought to be a profitable crop.

After a brief inspection of the farm and stables we returned again to the house. This is constructed in conformity with correct rural taste, without any effort to display wealth or magnificence. It is just such a home as an educated farmer of taste would desire. Proceeding to the library, the afternoon passed quickly away in conversation upon various topics pertaining to agriculture. Here, surrounded by his books and papers, his editorial labors are all performed. His expressed ideas found in his writings and lectures, which have such a home flavor, are the natural outgrowth of his pleasant surroundings. His editorial harness sits lightly upon his shoulders. He seldom visits the office in Boston, but instead spends much time, as every agricultural editor should, in visiting the farmers whom he would instruct, that he may fully understand their condition and their wants. My thanks are due to Mr. Brown and his pleasant family for kind assistance and polite attentions, which rendered my visit to their model country home exceedingly pleasant.

HARD WORK TO WRITE.—Farmers and others who are not much accustomed to putting their thoughts on paper, often complain that it is hard work to write. But these persons generally suppose that it is owing to want of practice, stiff fingers, &c., and that the easily read and smooth compositions of authors, editors and other fluent writers, are produced without much labor. This is probably a mistake, in most cases, though some persons write much more easily than others. An American historian stated that he had copied or re-written his work eight times with his own hand, before offering it to the printer.

Among the agricultural writers of note in this country, there is perhaps none whose style appears more natural, off-hand and easy, or less studied and labored, than that of J. Harris, Esq., who writes the "Walks and Talks on the Farm" in the *American Agriculturist*, in addition to books and more elaborate papers, and yet in his last article he says, "I would rather at any time dig a rod of ditch than write for ten minutes."

Excellence in writing as in everything else is the result more generally of perseverance and hard work than of any natural gift, and we copy the remark of Mr. Harris for the encouragement of farmers and others who may be disheartened by the effort and labor it costs them to get their thoughts and facts in readable shape on paper.

EXTRACTS AND REPLIES.

TURNING MUCK INTO A PROFITABLE FERTILIZER.

I am a young farmer just commenced in life, and being a reader of your valuable paper, and noticing with interest the great amount of practical information diffused throughout its columns, and the wisdom with which the numerous questions of your readers are answered, I have concluded to ask one, although I am afraid it is an old one. I have a good muck bed and I would like to know if I could produce a good article to top dress my land with, by adding to it some other ingredient that will produce an artificial manure, which will benefit the land, and whether such a composition would be a paying investment of time and money?

May 3, 1871. F. M.

REMARKS.—That the use of a sufficient quantity of good muck to absorb the liquid portions of manure, house slops, &c., and to increase the bulk of the droppings by one-half is a paying investment, is confirmed by the experience of many practical farmers. Experiments in the use of muck alone, and with muck mixed with other materials, have been made by many farmers with very different results. Old meat brine, or brine made from cheap salt, ashes, lime, saltpetre, salammoniac, &c., have been tried, but we believe not extensively used by farmers. Who can tell F. M. what ingredient to put with his muck to make a cheap and good fertilizer.

CATTLE LICKING PAINT.

What will counteract the poison which a calf gets by licking old sills or walls of a barn? I have lost a number of calves from that cause, and never could give them anything which would save them. I have one now sick from that cause.

CHARLES K. TRACY.

Hinsdale, Mass., April, 1871.

REMARKS.—If the barn is painted and the calf has licked that paint, give it a teaspoonful of saltpetre mixed with meal, every other day, until you have given three doses. If the barn is not painted, the licking is occasioned by that morbid appetite which prompts cows to chew bones, old leather and boards. We call it "*morbid*," when

is probably the natural appetite longing for something essential to the animal, which it cannot get. No nostrum has yet been discovered that will satisfy this desire. The true remedy,—if disease it is,—and the true preventive of it in all animals, is their liberty, and access to the bare ground, and especially to ploughed ground.

Cows are rarely seen chewing old bones in the autumn after running in a good pasture all summer, but usually in the spring, after a long winter's confinement.

Keep the calves clean, their skins loose, feed them generously with good hay and a little grain of some kind, and give them their liberty, and they will not be likely to lick the sills or walls of the barn.

USE OF LIME ASHES.

I would be glad to gain some information through the NEW ENGLAND FARMER in regard to lime ashes. Are they a good fertilizer to harrow in for turnips? Are they good for corn and potatoes applied in the hill? My land is dry and free from limestone. GEO. A. CARPENTER.

Cheshire, Mass., 1871.

REMARKS.—If by "lime ashes" is meant the ashes where limestone is burned, we have no doubt but they would be very valuable. Large quantities of wood are consumed in burning the stone, the ash of which, with certain portions of the lime that would be likely to fall among it must form a very valuable fertilizer, especially for a soil that has been cultivated for many years.

A common kiln affords about 200 bushels of lime, in the form in which it is put up in casks, and ten cords of wood are consumed in the burning. Of course, what is left after taking away the lime, must be of a valuable character.

GRAFTON MINERAL FERTILIZER.

I would like to have you publish in the FARMER the analysis of the ore from which the Grafton Mineral Fertilizer is made, and also state to what class of minerals or geological specimens it belongs; and how is it manufactured; whether burned like lime or ground as plaster? Where is Grafton? J. N. ISHAM.

South Wilbraham, Mass., May 6, 1871.

REMARKS.—The town of Grafton is in Grafton County, N. H., on the northern railroad, 44 miles from Concord. We have specimens of the rock from which the "fertilizer" is said to be pulverized. It is not burned like lime, but broken and ground like plaster. Some of our specimens are fresh from the rock, solid and heavy; others are from the surface where they have been acted upon by the atmosphere, causing the rock to assume the appearance of mineral paint, and pieces broken off are quite light in weight. We do not profess to be versed in geology, and give below an extract from the statement of the proprietors, Davis, Thayer & Co., which will show what is claimed to be the character and composition of the Grafton Fertilizer:—

The Grafton Mineral Fertilizer is the pulverized ore from the Dolomitic Vein of the Grafton Gold Mine. The following is an extract from report of Dr. Torrey:—

"The rock itself was next examined, chiefly with a view to determine the proportions of Silica and Carbonates it contains. The average quality was obtained by taking small portions from numerous specimens of the Rock, pulverizing these and mixing the whole until it was uniform in composition. Some of this was then analyzed, and found to contain 40 per cent. Silica. The rest was nearly all Dolomite, or a double carbonate of Lime and Magnesia."

A careful examination of a similar sample by Thos. C. Raymond, of Cambridgeport, Mass., gave the following result:—

Silica,	30.30
Protoxide of Iron,	6.27
Lime,	20.60
Magnesia,	11.17
Carbonic Acid,	32.11
Total,	100.45

SIDE ORIFICE IN A COW'S TEAT.

I wish to inquire what to do for a two-year-old heifer that has an orifice in the side of her teat, through which the milk flows in a stream when milking. HENRY B. WHITE.

Topsham, Vt., May 4, 1871.

REMARKS.—If the cow was dry, perhaps by scarifying or burning with a hot wire the orifice, and applying sticking plaster, collodion, glycerine or some such material, the aperture might be closed and the skin induced to grow over the opening. But while the cow is in milk we doubt whether anything can be done. By bringing the palm of the hand directly over the orifice while milking, the flow of milk through it may sometimes be mostly prevented. But after all, any such deformity or defect in a cow is perhaps most economically overcome by fitting her for the butchers.

A SICK SOW.

I have a sow that showed signs of illness the 20th of present month. From careful observation I believe it to be stoppage of water. Is there a remedy for such trouble with hogs? She was to have dropped her pigs the first day of May. H. S. C.

Shelburne, N. H., 1871.

REMARKS.—If the sow has not been ailing for some time, the difficulty is probably mechanical. Her increased size may have caused pressure upon some of the urinary organs. If so, when she has dropped her young the trouble will cease.

FAT MEAT OR GREASE FOR HENS.

Will grease or greasy matter make hens lay soft eggs? FREDERIC.

Worcester County, Mass., May 4, 1871.

REMARKS.—If fed in large quantity or for a long time, we think very greasy matter might prove unhealthy, and hence might cause soft eggs. Hens require a variety of food, and will not thrive or do as well on any one kind, as when the variety which they enjoy when at liberty to pick up first a seed of one kind of grain, then of another, then a bug or worm, then a dip at some vegetable leaf or root, and so on throughout the day. A little fat

meat will make hens sing gratefully; but too much should not be given them.

OLD AGE AND AGRICULTURE—CORN STALK FODDER.

Please find enclosed two dollars and fifty cents to pay for the FARMER another year. My attachment to it increases with my years. I am conscious that I cannot remain in the material form much longer, but I feel more interested in the improvement of agriculture than I did in my younger days. I believe in eternal progress, and that so long as I remain here in the body it is my duty to improve this world all I can. If I could say anything for the benefit of others I should be glad. I think I have got more than the price of the FARMER for one year, by giving heed to your article upon preparing food for stock. I never before turned my corn fodder to much account. This year I have passed it through a hay cutter and moistened it twenty-four hours and mixed some meal with it, and find it has fully answered the purpose of good English hay. Your editorials, extracts and replies and market reports are almost invaluable to me, as I am so decrepid that I cannot get away from home, but want to know what is being done abroad. THOMAS HASKELL.

West Gloucester, Mass., May 2, 1871.

SHOEING HORSES.

I have for some time been a subscriber and reader of the FARMER, and have occasionally seen articles in it concerning horse shoeing; and I have often thought I would like to express my opinion upon the subject, but not being a newspaper writer, have not until now made an attempt to do so.

I find by observation that most of the blacksmiths shoe to suit themselves. I certainly do; and have good success. I make my own nails and shoes. I do not like the pressed shoe, for the reason that it is too wide at the toe; and consequently must be narrowed too much at the heel, which contracts the foot and causes corns, and is apt to make the horse lame. Furthermore the nail-holes are too far back toward the heel, and are liable to crowd.

Now, I am inclined to believe that it is much easier to widen a shoe than to narrow one. My motto is, to have the shoe, when finished ready for setting, so that it will balance on the two nail-holes nearest the heel. When such a shoe is set, the heel or quarters of the foot are left free where the growth starts.

Now about paring the hoof. It should be pared at the toe mostly, in the majority of cases, but not too thin; set the shoe well back, and trim off the toe. This allows the muscles free and easy action, and the horse to stand square and easy, which gives him a much better appearance than when standing on his heels altogether, with toes turned up at an angle of forty-five degrees, like some horses I have seen in my travels. J. R. L.

West Braintree, Vt., May 5, 1871.

SALT.

No wrong habit or injurious stimulant can be abandoned without feeling at the time a reaction. An account is given in the FARMER of April 29, of the lessening the amount of milk obtained by omitting the accustomed use of salt. I think it was caused by the reaction, and only proves the use of salt to be injurious. If we are to judge only by objects produced when their use is suddenly omitted, then I could easily prove by experiments of only three days, that alcohol, tobacco and opium are among the greatest blessings known to mortal man. If the principle of reaction when we quit injurious habits was well understood, it would warn us against the contraction of many bad habits.

I think we need the salt or some other question to set the people to thinking on this subject. Was the ill results of the experiment caused by the lack of *necessary food* or the reaction from an unnecessary stimulant? I think reaction. For salt exists in the living organism in only very minute quantities, and from the liberal amount given the animals, I think no deficiency could result from omitting it for three days. The *thirst* that the use of a little more than the usual quantity causes in ourselves, and the acknowledged injurious effects of too much for animals, suggests that possibly there my be two sides to this question.

Concord, Vt., May 5, 1871. W. V. HARDY.

A GOOD COW.

Mr. Thomas Eastman, of this place, has a three-year-old native heifer that dropped a calf December 8, 1870. Since then up to the first of May, the family of two have used all the butter and milk they wanted, and there have been made and sold in the same time

103 pounds butter, at 40 cents	$41 20
378 quarts new milk, sold at 6 cents	22 68
	$63 88.

Her keeping was two quarts meal, two quarts shorts, with all the good hay she could eat daily. If any one can do better let them advertise the cow for sale.

Great rain in this section. Streams are high. The Connecticut river is rising fast. Distant hills are white with snow. Grass looks well. Some have planted corn and potatoes. OLD IRON.

West Lebanon, N. H., May 5, 1871.

BUGGY PEAS.

Noticing the request of a subscriber for a remedy for the pea weevil, I will give my experience; and if it will help any one to get rid of the pest, I shall be satisfied. Some twenty-five years since, a sister sent me a package of peas from New Jersey. I took a fancy to soak them in warm water for some time before planting. Before planting I noticed a dark spot on each pea. I examined them, and found a well formed bug in every pea, which I destroyed. I do not recollect as any of them were alive. Perhaps they were drowned. I have planted them about every year since, and have never had a buggy pea. Again, I sent to Boston for some peas. Before opening the bag, I took a dish of warm water and put the mouth of the bag into it, and turned the peas into the water; and the way the bugs scrambled for life was a caution. I examined every pea before planting. I have not had a bug from them. Again, I got some peas from Rhode Island which were recommended because they were not much buggy. I went through with the same process and have no buggy peas. A brother was telling an old Shaker of my experiment, when he said if the peas were put in a tight box or bag and kept over one year the bugs would die, and thus get rid of them.

If a whole neighborhood would unite to drown or starve the bugs they might soon be banished. If you should publish this and any should try it, I should like them to give the result.

Newport, N. H., May, 1871. H. A. JENCKES.

COMPLIMENTARY.—PROFIT OF FARMING.

Although I am not a tiller of the soil, just now, I feel a deep interest in that branch of our common business; and I think my interest in farming was greatly increased by the reading of your valuable paper, the NEW ENGLAND FARMER. Your paper has been greatly increased in size and inter-

est since I commenced taking it. And may it continue to prosper for a long time to come. I think one of the great secrets of farming is a thorough pulverizing of the soil.

When I commenced farming for myself, twenty years ago, I had a capital of only one hundred dollars, and when I sold my farm, two years ago, I had over thirty-five hundred dollars. Now if any one thinks farming does not pay, I shall beg to differ from him, although I must admit the truth of the old maxim,

"He that by the plough would thrive
Himself must either hold or drive."

GALEN ROSS.

Springfield, Mass., May, 1871.

For the New England Farmer.

NEATNESS ON THE FARM.

Who that has ever travelled about among the farmers of the country has not sometimes been disgusted with the untidy appearance of some of the places he has visited. One may sometimes find a man who carries neatness to the extreme, and spends more time in keeping tools polished than is profitable. I have seen a man show with much pride a set of shovels and forks that had always been kept up to a high state of brightness, by scouring in sand every time they were put away; and this after they were so badly worn that no man with a true idea of economy would have allowed himself or his men to use them at all. One cannot afford to wear a fork, or hoe, or shovel clear up to the handle. Most people use ploughs, harrows and cultivators as well as shovels, hoes, and forks too long after they are worn below a profitable working condition. The best carpenters keep their saws, chisels and planes constantly sharp, and find economy in it. So should the farmers keep their ploughs and cultivators in good working order by changing the old points for new ones much oftener than they do; and as long as they are worth using, they should be kept clean and bright.

I have known many tolerably good farmers to buy a new plough or cultivator and when done using it for the day, leave it out in the rain or dew over night, without ever wiping off the dirt that adhered to the castings. The next time the tool was used it would be found covered with dirt and rust, which it would cost ten times as much to remove, as it would to have kept it off if it had been attended to at the right time. No rusty or dirty farm implement is profitable to use. It is the work of but a few minutes to wipe the dirt from a plough, horse hoe, or any of the many hand tools used on the farm, if done at the moment we are done using them. A woolen cloth with or without grease, or even a dry sod will remove the dirt from a plough, and save much scouring in the future. Many plough and cultivator castings are broken every year by being thumped against rocks, while in use, to knock off the dirt that adheres in consequence of their not being kept clean and bright.

In laying down fields to grass, neatness as well as economy requires that loose stones and rubbish of all kinds should be removed, and the land well rolled down, and as far as practicable the larger and fast stones should be removed either by sinking, or blasting and cleaning off from the field. A mowing field never looks quite as neat if it is covered by rocks and stone heaps, as it does if all are cleared out and the land left as smooth as a well kept lawn. I have heard men argue that removing large rocks did not pay. They said it cost a great deal, and when done there was nothing left but a hole in the ground which must be filled up by carting in soil. I have known those same men to find time almost any cloudy day to go off fishing, and when night came all they had gained was an empty stomach, and possibly a half dozen little mud pouts.

A year's stock of wood for fuel all cut and piled under cover is a pleasant sight to almost any farmer's wife. I find different farmers have quite different ways of getting together such a pile. I see some who bring all the refuse fuel on the farm right up to the door and leave it there till they find time for themselves or their men to cut it. Old fence posts and rails, broken down trees, and broken down wheels and other farm implements past use, are dumped close by the kitchen door. In a few years the yard is covered with sawdust and chip dirt, and the green grass gives place to burdocks, nettles and other coarse and disagreeable weeds. I find other farmers who have their wood pile a little farther off from the buildings, in the corner of some lane or pasture, and when the wood is all cut in stove lengths as it should be, and well seasoned, it is thrown on a wagon and carried to the wood house and neatly piled.

There is nothing like a good green turf around farm buildings to prevent dust from being blown into the parlor, kitchen or dairy room. On a dairy farm, neatness can hardly be carried to an extreme. The stables, the yards, and the rooms used for keeping the milk and making the butter or cheese, cannot be kept too clean. The yards should have suitable drainage, and be provided with dry walks for the attendants. The stables cannot be kept either clean or comfortable without plenty of bedding or a liberal supply of sand, loam or muck dried and stored under cover, to be used freely at all times as absorbents; while with these, a stable may be kept in such a condition that the dairy farmer may not be ashamed to receive his friends or customers at any time.

Some people object to hauling sand or muck to be used in the stables and yards because of the expense. I do not think the danger lies so much in the direction of doing too much, as towards doing too little. I consider a room near to the stable when a six months stock of dry earth can be stored for daily use, one of the best investments a farmer can make. It en-

ables him to save all the liquid manure from his stock, and at the same time keep the stables in a decent and presentable condition at all times. There can be few sights more disgusting to those who buy their milk, than that of seeing a filthily dressed man sitting down in a wet dirty, slippery stable to milk a cow that is soaked in her own filth. It puts me out of all patience with farmers who allow themselves or their men to be so slovenly as to milk a cow in the stable till after it has been cleaned and purified by the use of some kind of absorbent. Then to promote *personal* cleanliness, an extra suit of loose clothes should be kept in the barn that can easily and quickly be drawn over those usually worn. Various accidents are liable to happen during the operation of milking, which endanger clean clothes. One should have a loose blouse to protect the arms and waist, and a pair of pants or overalls for the body and legs. If these, instead of being sewed on the outside of the seams of the legs are left open and supplied with buttons, they can be drawn on or off over the boots much more easily. House painters and nearly all mechanics have suitable outside garments that they wear while engaged in work, that are laid off before coming to the table. If farmers would take as much pains to keep *themselves* clean, they would really respect themselves and would be more respected by those who now call them the "bone and sinew" of the country whenever their votes are wanted.

A. W. CHEEVER.

Sheldonville, Mass., Jan. 24, 1871.

For the New England Farmer.

OBSERVATIONS AND EXPERIMENTS.

The Past Winter—Decline in Prices—Experiments with Muck, Lime, Phosphate, Ashes and Salt, composted—Agricultural Colleges should teach Farmers to make Manure—Instability of Prices of Farm Products.

It being the season of the year for frogs to peep and for other signs of spring to show themselves, this communication of mine may be an additional evidence that spring is in fact on hand, even up here in old New Hampshire.

Well, among other things, we have had a mild winter; not a week of good sledding. People have run sleds and sleighs a good deal, but principally on frozen ground. So you see that, as usual, it has been hard sledding with farmers. Hay and potatoes were sold for fair prices in the fall, soon after harvesting; but the weather being moderate, and with the help of wise men, of whom we always have a large crop in the city and village, soon knocked them all *flat*. Hay, which has been asleep all winter, is wakening up a little; and, as the new crop now looks, we should not wonder if buyers waked up before long.

In regard to our experiments last season with phosphate, lime, muck, ashes, &c., I must report that it proved nearly a failure. It was not the fault of the land, for it was as good corn land as there is in Marlow, and it yielded about one ton of hay to the acre the year before planting. It was broken up in the fall, and was well rotted, and in fine order last spring when we planted. The corn came up evenly and nice, and looked well until the last of June. We gave it one good hoeing, but it did not grow. At hoeing we put ashes on some rows, phosphate on some, good rich vegetable mould that was dug up from under the hog yard, that had a rotten plank floor; but none of it, with the exception of a few hills, or a few stalks in the hill, occasionally, answered our expectations.

We made a compost manure of twenty loads of muck, one cask of lime, two casks of phosphate, three barrels of ashes, with about one and a half bushels of salt, all well mixed together, of which we applied one-third of a shovelful to the hill.

We spread no manure on the ground. On about one acre of the piece we put in a light shovelful of manure from the cow and ox stable, and put in each hill one large spoonful of phosphate, covering it with dirt, and dropped the corn. No other manure was used on this piece, and we had fair corn. It was hoed but once.

In some rows I did not put in anything; others phosphate only; others, salt only; others, only the composted muck. At harvesting I could not see much difference in the rows thus differently treated. The rows with nothing in them were a little the lightest. The fact was, it all wanted hoeing again; but haying came on, and it was impossible to raise help to do it.

One thing I noticed, some hills would have four good large ears of corn and some only one; but all had some sound but small ears. The field contained nearly three acres, and it gave me 100 bushels of good sound ears of corn, more than one-half of which grew on the piece manured, as stated above, with stable manure.

Around the whole piece two rows of potatoes of different kinds were planted in the compost manure. Some kinds did well, but the Davis Seedling filled the hills with strong roots and runners in every direction, and it required a man's strength to pull up a hill, raising dirt and all, but there were few good potatoes.

Thus I have endeavored to give you my *experience*. You see the result. I think the failure was owing partly to the dry season, but I do not think if the season had been good that I should have been entitled to a monument quite as large as some piles of potatoes or corn that I have seen. But farmers do not expect to get monuments. With them it is out of the question. Such things are for

great warriors, statesmen, and scientific men. We have no laboratories except our potatoe and cornfields, and no knowledge of chemistry. But we are taxed, the nation gives land and the rich give money, to found colleges for rich men's boys to be educated in, that they may be learned and wise. But where shall the farmers look for the knowledge of chemical or other combinations of materials to make a good and cheap manure, unless to our Agricultural Colleges. They have all the means, time, and money they want. I think the patent manures we have now on hand come too high, and they are too uncertain to be profitable for farmers to use to much extent.

I think Dr. Nichols helps us some. He says he can raise good crops with 24 loads of manure to the acre. With that we can all do very well. But when we attempt to increase our crops by patent manures we generally fail. And perhaps it is well after all that we should fail. Were we able to double our crops, or even to make any considerable increase in their amount, would not their market value decrease in just about the same proportion? Look at the facts. Last fall potatoes were said to be very light, with the exception of some favorable situations, and people made up their minds that they must pay a good price for them, and early in the season they were willing to pay 70 to 75 cts., but the wise heads in the villages made people believe that the country was full of potatoes, and down they went to 35 to 45 cts. So with hay. In the fall it was worth $20 to $30, per ton, and would have gone higher if the winter had been an ordinary one. It is so with every thing a farmer raises. Look at maple sugar. It goes from seventeen cents a pound down to nothing—don't want it. There appears to be no intrinsic value to anything a farmer can raise. We want a balance-wheel on the system, so that the machinery will run a little more steady.

We are often told by dealers that the market price of sugar is not affected by the maple crop as much as the Connecticut river is affected by a flood in some little trout brook that happens to run into it. This is when they have other sugar to sell. But when we have sugar to sell, an abundant crop affects the market at once. Does this apply to other trades and other kinds of business? If a large invoice of merchandise arrives in any of our cities or towns do the farmers get together and congratulate themselves that now goods will come down to mere nothing? Or is it so with the manufacturer or any other trade but the farmer? Then the price demanded for labor affects us more than any other class of men, for we cannot combine to affect anything, and we are too poor to think of retaliation. As Solomon said, "the destruction of the poor is their poverty." So three-fourths of the farmers have neither money nor friends to help them out of the mud and mire.

P. T.

Marlow, N. H., May, 1871.

For the New England Farmer.

DRAINAGE OF WET AND DRY LAND.

In your weekly issue of the FARMER, April 29, a "Fireside Farmer" uses the following words in his communication: "I make, and will uphold the assertion, that there is no description of arable land, however situated, or whatever constituents it may have, that cannot be profitably improved by draining."

I have had, Mr. Editor, some experience in draining some kinds of lands in a small way during a period of more than forty years, not in the "fireside style" however, but using the tools necessary for that kind of work with my own hands. I drained a piece of swamp land a few years ago which was so wet and miry when I commenced on it, that I found it very convenient to dispense with my cowhides altogether; to roll up the bottom of my pants to my knees, and my shirt sleeves to my elbows, and not have any half-way work about it. Though the labor was severe, I succeeded by perseverance, in draining the water off to the depth of about five feet, by means of a main drain, and other cross drains. I now have a mowing field that yearly produces a large crop of fine English hay. I have also an abundance of peat muck accessible at all times to draw upon for making compost manures, where before was nothing but a wet, miry, barren swamp.

I have also a piece of what was once a wet upland that I have greatly improved by laying an under drain through the centre of it, constructed of small stones put in a ditch and covered over with soil.

Thus far, I cordially agree with your correspondent, and believe that all kinds of *such* wet lands may be greatly improved by draining. It takes the surplus water off that fills up the pores of the soil of such lands in its natural state, and lets in the light, the rains, the air, and the frosts, and makes the land warm, light and friable, and, with proper tillage, very productive.

But when your correspondent comes to other kinds of land, such for instance as I cultivate, on which I have grown very satisfactory crops of corn, potatoes, rice, oats, clover, herdsgrass and redtop hay for a great number of years, and tells me that such lands can be improved by draining, I cannot but doubt, very seriously, the correctness of his assertion. It is not in accordance with my experience in the tillage of lands where you will have to dig down all the way from three to fifteen or twenty feet to come to standing water; where the water never stands on the surface of the land except for a short time and in some depressions, and after a rain or when the snow is going off in the spring. In reading this part

of your correspondent's assertions, I suppose I felt some as the boy did whose father, for some misdemeanor or other, was giving him a flogging, and who cried out, "Stop dad, let's argue," for, really, I think I had rather argue a little by the "fireside" than take my draining tools and go to work on such a dry field.

Now, Mr. Editor, I will turn back to that piece of swamp land or to the wet upland field, or to both, for an example. I will suppose, that instead of he numerous drains I was obliged to construct to drain off the surplus water, in either case, I could have gone down to the lowest point in the bottom of that old swamp, or the wet upland mowing, and by some Yankee device have cut a channel for the water to drain off, direct to China, or into some lower strata of the earth, so as to have lowered the water to the same level that was done by the horizontal drains, would not the same object have been attained and the same benefit secured by such perpendicular drainage? I believe this cannot be doubted, nor that the air, the light, the rains and the frost, would act as favorably on the soil in one case as in the other; and drained by the last method those fields would be in precisely the same condition in regard to drainage as those other tillage lands I have referred to, where the water never comes near the surface, and consequently cannot be improved by drainage. This makes out my case, I think.

But both might be greatly improved, according to the texture of the soil, either by deep or shallow ploughing, top dressing, or ploughing in manure. These topics would form, in my opinion, very proper subjects to discuss in the papers and at farmer's gatherings.

But of course the *perpendicular* drainage I have alluded to above, is all visionary. That Yankee is not born and probably never will be, who will be able to invent a way whereby the bottom of many of our old wet and barren swamps and uplands in New England, may be tapped and the surplus water easily and cheaply drawn off, in a perpendicular direction downward. But, fortunately, nature has done for most of our lands just what is needed to be done to the small portion of them in which water stands too near the surface.

ROYAL SMITH.

Millington, Mass., May 5, 1871.

COOKING FOOD FOR STOCK.

Most farmers cook the food for their fattening swine, and many agricultural writers have advised us to steam our fodder for all farm stock. But so far as we are informed there are but few either in this country or England who have adopted this plan. In an essay on this subject by George Geddes, published in the *New York Tribune*, the following statement is made of what he saw and learned by a visit to the farm of Mr. B. A. Avery, near the city of Syracuse, N. Y., who has for four years cooked the food for a stock averaging 115 animals, 60 of them being cows, 15 horses and 40 young cattle. The statement embraces facts in relation to average yield of milk per cow, &c., which we think will prove interesting, aside from those which bear on the subject of cooking the food.

General Appearance and Health.

The stock is in very high condition; Mr. Avery says some of the cows have too much flesh to give the most milk. Many of the cattle are better beef than much of that killed as such for city use.

To these important points I gave much attention, and learned that there had been but two deaths on the farm in the last four years—two very old cows having died—as Mr. Avery says, "they were milked to death." They would not fat, but turned their food into milk, became poor, feeble and died. He says that for the four years during which he has fed cooked food all the winters, he has had no milk-fever, which was quite common before he cooked the food, and no young cattle or horses have died within the four years. This shows that cooked food does not destroy the health of stock.

Yield of Milk.

As Mr. Avery sells his milk by measure, this is to him a point of great importance. He gave me exact figures. His cows are not large; the young ones are from Ayrshire bulls, and some of them show quite high breeding. He disposes of the older cows at the rate of about ten a year, putting in their places two-year-old heifers of his own raising; thus one-third of his cows are two and three-year-old, and not yet up to their best age for milk. The average yield per day of each of these sixty cows, is for the whole 365 days in the year, six and a quarter quarts, which is 2281¼ quarts for each cow for the year—or 136,875 quarts for the whole 60 cows. Before he cooked the winter food the average was nearly one quart less than it is now to the cow for each day. This gain is principally in the winter, when milk brings its best price. It is not all in the winter, for the condition of the cows in the spring is so good that the summer yield is somewhat increased. But giving the cooking the credit of producing an increase in the year, for each cow, of 300 quarts, whatever that amount of milk is worth, it is so much gain.

The yield of milk of Mr. Avery's cows will doubtless be considered small by persons who do not take into consideration all the facts in the case. As has been stated, ten two-year-old heifers are every year put in place of ten cows rejected for various causes from the herd. So the stock is kept entire without

buying, and a surplus to sell every year of ten cows. Commonly a cow is not at her best for milk until she is five years of age. *Thus one-half of the whole herd consists of growing animals.* Winter milk being of so much more value to sell than that produced in the season of good pastures, it is important to have a large part of the herd drop their calves in the fall of the year. Proper allowances being made for all the circumstances that make up the whole economy of a milk dairy, I think Mr. Avery's average yield of milk is a good one. Testing this matter by tables given by Mr. L. B. Arnold in a valuable article lately published in *The Tribune*, entitled "Grain Raising vs. Dairy Farming," we find that Mr. Avery's production of milk is fully equal to the yield of what Mr. Arnold calls dairy farming. He gives 400 pounds of cheese as the annual production of a cow. Five quarts of milk will make a pound of cheese, and the 20 pounds of butter that he credits the cow with in addition should be made from 12 quarts of milk to the pound. Thus we have 2000 quarts for the cheese and 240 quarts made into butter, in all 2240 quarts, which is just 41½ quarts less than Mr. Avery's average. Mr. Arnold, in his estimate of a butter dairy, gives 160 pounds as the average annual production of a cow. Mr. Avery's cows would make, at 12 quarts of milk to the pound, 190 pounds of butter.

I am satisfied that Mr. Avery's average production of milk is a large one, though much larger stories are often told by men who do not, as Mr. Arnold does, know all the truth in regard to what large dairies of cows are capable of doing.

Cost of Cooking.

One more man, or large boy, is required on the farm during winter than was required before the food was cooked. To the cost of this boy must be added use of machinery and fuel to make steam. All of these items are not estimated for the six months of cooking food at more than $250. But Mr. Avery says he has fully determined in his own mind that there is a saving in quantity of food consumed equal in value to the payment of this expense, and besides a saving of $10 for each of the 115 animals fed. This is, in all, $1,150 to be added to the value of increased yield of milk, not less than 18,000 quarts in the year.

Mr. Avery showed great care in making these statements, evidently desirous to keep within the limits, lest some one might be misled, and he verified his calculation as to the saving in food, by saying that the average amount paid out for food, not raised on the farm before cooking was adopted, was $1,800 per year, which by cooking had been reduced to $1,000, and that now he had fifty tons a year of hay to sell, whereas before cooking he had none to sell, consuming his whole crop on the farms.

That is to say, he supports on 200 acres of land, besides raising a little grain to sell, 115 head of farm stock, buying $1,000 worth of food in the form of brewers' grains and shorts, and selling fifty tons of hay. He sells the old cows and brings up ten calves each year, thus keeping his stock good at the cost of the farm. Our Herkimer County friend, in his articles on dairy farming, I think, asked for 200 acres of land to sustain a dairy of forty cows.

I consider Mr. Avery's management a great success, and will now give

The Method of Cooking and Feeding.

A small brick building holds the boiler to make the steam, which is carried in an iron pipe under ground about fifty feet to a four-horse power engine in the barn, that drives a machine for cutting stalks, straw, or hay. This machine cuts the stalks into lengths of from one to three inches, and *mashes them.* The exhaust steam is carried by a pipe into the cooking-box, which is placed on the floor of the room, directly under the cutting-machine. The exhaust steam is introduced into the steam-box at the bottom, and passes up through a false floor made of narrow slats into and through the mass of food to be cooked. The steam-box is ten feet long, eight feet wide, and 6 1-2 feet high, made of plank, strongly clamped, and having close joints.

The forage is prepared, after being cut for steaming, by wetting every five bushels of cut stalks or cut hay with fourteen quarts of water, and mixing with these five bushels one-fourth of a bushel of shorts.

The pressure of the steam at the boiler, when using the engine, should be sixty pounds to the inch, and then the exhaust steam will do the cooking well. *When steam is used for cooking only, thirty to thirty-five pounds to the inch is better than a higher pressure, says Mr. Avery.*

Immediately after dinner (noon) the engine is started and cutting stalks or hay commences. When enough is cut for a day's feed, the fire is no longer replenished with coal, but is allowed to go down, making steam for some time which is let into the box of cooking feed —which will remain hot till the next morning, say eighteen hours, when the box is emptied by feeding out its contents, and again the box is filled from the cutting of the day before.

Feeding.

There is a door in the side of the steaming-box, which is opened, and the hot food taken out and carried in baskets to the mangers of the cows—they having been turned into the yards in sufficient time to have the stables cleaned, and all the orts (coarse leavings of the manger) of the day before taken away, and fed to the young stock and horses. When the cows are let into the stables they eat the hot food then before them with avidity.

Twice during the day dry hay is fed to these cows, which they also eat with a relish. The

milking is done in the stables—the cows being fastened by short chains to round posts. The cows stand thus fastened until they are turned out the next morning while the cleaning is done, and are made to eat all they will during the whole day.

Treatment of Calves.

The calves are selected with care, and are only fed milk until the milk of the mother is fit to sell. After this, the condensed steam which is under the slatted floor of the steaming-box, in the form of water, strongly loaded with the juices of the cooked food, is used for calf feed, having been strengthened by cooking with it corn meal, well salted. If there is any tendency to relaxed condition of the bowels, strong coffee is given, and great care is taken not to allow calves to run on the fresh grass produced in meadows after they have been mowed, as this rowen, Mr. Avery says, is to be avoided if the calves are to be kept healthy. Mr. Avery's farm has considerable low land that never suffers from drought, and thus he has green pastures every summer, and is not under the necessity of providing for soiling in droughts.

All things considered, I think Mr. Avery has avoided extremes, and made as successful an attempt to avail himself of the advantages of cooking food for farm stock, and at the least cost, as any that has come under my observation.

Fairmount, N. Y., April 19, 1871.

FARMERS' WIVES.

The farmer's wife has plenty of hard work to do. We all know that. She has plenty of dirty work besides. She cannot fold her soft white hands, and sit in her elegant parlor and await a stream of fashionable callers, No! Farm life means work—hard, rough, continuous work. It means something else, too. Let us see.

First of all the farmer's wife lives much in the companionship of her husband. She has him, body and soul. To her he can bring all his vexations and cares. She can understand them all—can sympathize with all. The day's work done, how sweet the twilight hour, the evening converse! There is time for interchange of thoughts and feelings. Husband and wife are partners in all business relations, and can fully understand each others' cares, trials, and perplexities.

Very different is the case of the merchant or the professional man. There is no partnership here. Day by day the husband enters the lists in the keen competitions of business, anxious to gain wealth or honor that he may thereby gain wealth. He only cares for the money, so that his wife may spend it. She does not understand his business—cannot understand it. So their paths in life diverge. They have few interests in common. The beautiful dreams of "united hearts and hopes," which maidenhood revels in are forever unfulfilled, and the married pair go on in separate paths to the end of their journey.

The farmer's wife has also the companionship of her children. In the farm house there is plenty of elbow-room for the little ones in their mother's presence. They can go with her wherever she goes; she can always listen to their prattle, can direct their first efforts at thinking and doing. No "kindergarten" ever invented, presents so good a school for the little ones, as is afforded in the farmer's home. Could some hard working farmer's wife who is discouraged at the difficulties of her post, once step into these city palaces, and see how utterly impossible it is there to afford children the development, physical and moral, they ought to have, she might be reconciled to her lot of seeming hardship.

Lastly, the farmer's wife is sure of the future. The house she has labored so hard to beautify and render comfortable may, in almost every case, be hers till she removes to the better land. No fear of a turn in business, or an adverse wind of popular disfavor which shall in a moment reduce her to penury. No! the small accumulations are, in all human probability, never to be suspended. The quiet little stream will continue its course, not like a "Summer fountain dried when our need is sorest," but, fed by springs that heaven opened up when the foundations were laid for this solid earth, when seed-time and harvest were ordained, — it will grow deeper and broader till lost in the boundless ocean. Think of these things, my good lady, and don't complain of the toil, the dust, and the roughness of your rural life.—*Western Rural.*

THE SORE HEAD IN POULTRY.

I notice in the March number, a cure for "Sore Head" in Poultry, and desire to give your readers the benefit of a remedy which has never failed me.

In the absence of a better cognomen, I have called the disease the "swell head." The first symptoms are a watery and frothy collection of matter in the eye, often accompanied by warts or sores on the head. If not attended to, the formation, a white, tough matter begins inside of the eye lid, and always below the eye, accompanied by considerable inflammation. The swelling increases rapidly, frequently extending to the inside of the throat, which becomes ulcerated. The fowl becomes blind in one, or both eyes—as the disease sometimes attacks only one eye at a time—and death ensues. The disease is highly contagious, and frequently sweeps the poultry yard, if not arrested. I have never failed to cure a case even when the fowl's eyes were completely shut, from the swelling. The frothy matter first collects in the front or outer corner of the eye, then to some extent impairing the vision, which will be perceived

by the fowl striving often to wipe it away on its feathers.

Poultry thus affected should at once be placed in a coop by themselves. Make a strong brine in an old cup, or some other suitable vessel, and wash the head at least twice a day, using a soft rag. Suffer the brine to go into the eye, as it seems to arrest the formation of the hard tough matter alluded to. It sometimes occurs that this formation has already taken place before the disease is discovered. In such cases I sharpen a piece of chip, and by carefully inserting it between the eye and the lid remove it entirely. If not removed by an operation, though the eye become cured, there will always be an unsightly protuberance. If the head and gills have warts on them, the scabs should be removed by the finger nail, or by a pocket knife, previous to washing. I do not remember of ever losing but one case, under this treatment, though I have often had to feed them by hand for two or three days, on account of blindness from swelling; and this case was so far gone when I took it in hand, that ulcers had formed in the windpipe. In addition to the above treatment, the nostrils must be kept free of matter by pressing with a rag outward along the beak.—*H. D. McMillan, in Rural Carolinian.*

For the New England Farmer.

PLASTER---MUCK---PLOUGHING IN MANURE.

I see by an extract from the *Maine Farmer* that "W. S. N." is looking for light on the subject of Plaster on sandy soils. Perhaps I can throw a few rays on his path, and perhaps not, by relating a circumstance which took place several years ago in this county.

A Mr. Scott, (I do not give true names,) owned a farm of which the mowing and tillage was sandy and sand, underlaid by coarse gravel and stones, and rather inclined to leach. Long continued cropping, without adequate returns, had so exhausted the soil that twenty-five acres of mowing cut no more than twelve or fifteen tons of hay or fodder of rather poor quality. So Scott said publicly, "I'll fix the old place and shave some fool when I sell." Consequently he purchased and applied some 300 to 500 pounds of plaster to the acre (broadcast,) the effect of which was, when haying came, there were from one to two tons to the acre, of nearly clean timothy. Scott knowing that one Carter, in an adjoining town, wished to purchase a farm, called upon and induced him to examine his place while the crops were growing. Carter, who had worked on clay land, came and was in ecstacies at the idea that sandy land would grow grass to that extent, and purchased the farm, paying certainly a third more than its real value. Scott gathered his crops, sold them off, gave possession the coming spring and left.

The first year after entering upon his new farm, Carter cut perhaps 1500 pounds of hay to the acre, and the next, 1000 pounds, or so, and in four years, eight or ten tons were all that could be procured on the entire premises.

By the above I am of opinion that it will not pay to apply plaster on sandy land and sell the produce; still, I am inclined to believe that, judiciously applied and the product carefully worked up for manure and returned to the soil, plaster will in the end benefit all dry, thirsty soils, in this section. At any rate, I have just about such a soil as I have described and am intending to use 1500 or 2000 pounds of plaster this season, on eight or ten acres.

I should be very much pleased to see double the amount of agricultural matter in the FARMER, and you may consider this as my first contribution towards the extra page, which I hope the proprietors will be compelled to furnish in order "to keep the docket clear." I want this, if for no other reason, to drum the idea into people's minds that muck will benefit land. I have been digging a little this spring, have applied some to potatoes in the hill, the rest is going into the barn-yard and pig pen to be worked over. "Some of my neighbors say *that* black stuff will sour and spoil your land." I tell them I am going to sour the entire farm before I quit.

Allow me to say a word in regard to ploughing in manure, and I will stop. I have derived great benefit by ploughing under long, strawy manure on dry sandy upland, at the rate of 35 two-horse loads to the acre, and have obtained 250 bushels of potatoes per acre, where two years before I did not cut over half a ton of hay, and the year before that only 15 bushels of India wheat. Still I should apply all fine manure to the surface and harrow thoroughly, if I was looking for one good crop, and then part of another. JONES.

Addison County, Vt., May, 1871.

HEAVES IN HORSES.—A "Veterinarian" writes the *Rural New-Yorker*:—"Heaves are caused by the enlargement, and often rupture of the air cells of the lungs, and are incurable; for no medical skill can rebuild or repair the broken down structure of the lungs. Much can be done for the relief of the animal, however, by the feed, which should be nutritious, and lie in little compass, as bulky feed distends the stomach and presses upon the lungs. Plenty of grain and little hay, with the dust well shaken out, and a little water sprinkled on, with steady work, or exercise, will do as much to relieve the horse, and make him useful, as anything."

—A lady in Dorchester, N. H., during the illness of her husband this spring, tapped their sugar orchard, cut her wood, gathered the sap, and made alone four hundred pounds of sugar.

SHEEP AND MUTTON.

SINCE the introduction of pleuro-pneumonia and the foot and mouth disease among our domestic cattle, there has been an unusual demand for good mutton. When the latter disease was announced as existing among us, even though only in a few locations, we were informed that the sales of beef fell off by a very large percentage, and that the demand for mutton rose in about the same ratio. This change has made many people acquainted with the qualities of mutton, who have heretofore entertained a strong dislike for it.

The benefits derived from the culture of sheep are certainly co-equal with those which we gain from the use of any of our domestic animals—the ox, the cow, swine or the horse. Great as are those which spring from the cow, that is sometimes the principal support of the family, quite as important may be obtained from the sheep, by its flesh, its wool, and its prolific powers.

For the wonderful advancement of New England, which, in a little more than two hundred years, has sprung from the wilderness to one of the most wealthy and intelligent districts in the world, we are greatly indebted to the sheep. The element of prosperity which they have afforded has been mainly their wool for the manufacturer,—not their flesh for the family. The use of mutton, however, has been steadily increasing, as our people learn that it is not only a most healthful and nutritive article of diet, but is acceptable to the taste.

According to the census returns for 1870, there are upwards of *thirty million* of sheep in the United States. Vermont having 997,000; New Hampshire 620,000; Maine 501,000; Massachusetts 119,000; Connecticut 118,000, and Rhode Island 34,000. The population of the United States in round numbers, is 38,000,000, so that we have a little less than one sheep to each inhabitant. From these facts it would seem that sheep husbandry is inviting for the use of flesh without much regard to the value of the wool.

It is desirable, however, that a breed should be selected which would produce both wool and mutton. A gentleman who has had large experience both in the production and manufacture of wool, states that in Massachusetts the *long* wooled English *mutton* sheep will be found the most profitable. He adds, the Cotswolds produce good combing wool, good *mutton* and good lambs, and are a profitable breed. If Oxford Downs are preferred, take good care of them and they will make a faithful return. The Leicesters are splendid sheep —none better for wool—few surpass them for mutton. The South Downs are famous mutton sheep. Mr. COLMAN, Massachusetts Agricultural Commissioner to England, said, "in point of symmetry, weight, quality of wool, hardiness of constitution, and general profitableness to the farmer, he had seen no sheep which equalled Mr. Webb's South Downs."

The Leicester and Merino,—South Down and Merino,—and the Cotswold and Merino, produce a wool which is in great demand for worsteds and medium cassimeres. The stock from these crosses will fatten at two years of age, and produce a carcass weighing about one hundred pounds, better adapted to the American appetite than the pure Merino or either of the purely mutton varieties. The lambs, if not quite so large as those produced by the mutton varieties, are sufficiently large to give a good profit, while the wool is quite valuable.

We are glad that the use of mutton has considerably increased among us. This has been greatly owing to the *improvement in the mutton itself*. England succeeds well in her sheep husbandry, because *all the products* of the sheep are in quick demand. Her people consume more mutton than beef. Experiments show that mutton is not only more nutritious, but digests and assimilates with the system more easily than any other meat. A carefully drawn report on the subject says:—

"When our farmers find the demand for good mutton increasing according to their exertions to make it good—that they can raise it cheaper than beef, and that it is better husbandry to get one hundred pounds of mutton from one sheep than from two, then we shall have them cultivating the best breeds of English mutton sheep, to the comfort, profit, and health of the whole community as well as themselves."

One other consideration which we would urge upon New England farmers, is, that wherever lands are not too costly for extended pastures, none of the domestic animals are of greater consequence to the nation and the farmer than sheep. They can be reared in situations,

and upon soils, where other animals would not live, and at the same time afford a profit. As articles for home consumption and exportation, as fertilizers of exhausted soils, reclaimers of run out pastures, and in other points of view sheep husbandry deserves to be esteemed as a chief branch of rural economy.

AGRICULTURAL ITEMS.

—There have been 200 woolen factories started in the Western States since 1861.

—It is claimed that California will this year be the second wool-growing State in the Union.

—California is expected to produce a very heavy wheat crop this year, the breadth of land sown being fully twenty-five per cent. more than last year.

—It is a fact worthy of notice that very few of the new American varieties of potatoes are grown in England, and that the English varieties are little known in this country.

—The stable manure from the hotels in Ludlow, Vt., and vicinity, has been bought by tobacco raisers in the Connecticut Valley and shipped on the cars.

—A. C. Moore, the most extensive breeder of Poland China hogs in this country, allows his sows to have but one litter a year, that to be dropped in April, May or June. Eight months is as young as he allows pigs to copulate. He thinks in-and-in breeding very injurious.

—The town of Weare, N. H., reports, in the census, a larger value of farm products in the year 1869 than any other town in the county, if not in the State. This town will be recognized as the location of some of the intelligent correspondents of the FARMER. No wonder they raise good crops!

—A successful potato grower in Maine recommends the following mixture to be applied in the hill at the rate of about one-third of a gill each; a cask of lime slacked with water in which has been dissolved half a bushel of salt. To this add an equal quantity of ashes and a bushel of plaster. Mix thoroughly. This will make about five barrels and will be sufficient for an acre.

—A Missouri gardener stated that on the 16th of April last year, when his grapes were in full blossom, there was a severe frost. He supposed his crop was destroyed. But, to the surprise of all, after these fruit buds had been killed, a new set of dormant buds put forth blossoms, and two-thirds of a crop was realized—the vines producing on an average two tons to the acre.

—A fire proof fence can be made by following these directions: "Make a wash of one part fine sand and one part wood ashes, well sifted and three parts lime ground up with oil, and mix them well together. Apply this to the fence with a brush—the first coat thin, the second thick. This adheres to the boards or planks so strongly as to resist either an iron tool or fire, and is, besides, impenetrable by water."

—In an article written for the *Ruralist*, John S. Ives, of Salem, Mass., says the only reliable rule he has ever found for determining the sex of eggs is, when the cavity in the largest end of the egg is found to be upon one side it indicates a pullet chicken; when the cavity is on the extreme end a cock bird may be expected; this can be determined by holding the egg before a strong light. Yet this indication will sometimes fail.

—Our correspondent, John Whatmore of Illinois, writes to the *Germantown Telegraph* that the smell of a goat is obnoxious to the nostrils of rats; that the two won't be friends and companions on any account whatever, and that the introduction of goats to one's barn or premises will cause an immediate stampede of all the rats. Being sadly plagued by rats about his house and farm building, he got a couple of goats and had not seen a rat for upwards of two years.

—The young man who will distance his competitors is he who masters his business, who preserves his integrity, who lives cleanly and purely, who devotes his leisure to the acquisition of knowledge, who never gets into debt, who gains friends by deserving them, and who saves his spare money. There are some ways to fortune, shorter than this old dusty highway, but the staunch men of the community, the men who achieve something worth having, good fortune, good name, and serene old age, all go in this road.

—A milk dealer in Springfield lately sold out his route to a green hand in the business for $750. But the new man soon found that his milk would not go round to all the old circle of customers, and applied to the seller for relief, who gave him the following recipe for making milk, assuring him that with this he would be all right: "Take three table-spoonfuls of molasses, one and a half teaspoonfuls of saleratus, and three quarts of milk, to twenty-two quarts of water. Add three pints of this mixture to each twelve-quart can of milk."

For the New England Farmer.

CUTTING AND CURING HAY.

In a late number of the FARMER, "W. H. Y." gives some very good reasons for cutting hay early. I should infer from what he says that he would cut it before it was fairly in blossom. He bases his argument in favor thereof on the likes and dislikes of cattle. I hardly think that an infallible or a reasonable guide to go by. You give a child his choice, and nine cases out of ten he will choose pie and sweet cakes, to the more wholesome bread and milk, or bread and butter.

I do not propose to write anything in favor of late cut hay; far from it. I have suffered enough in consequence of it. But many people are crowding towards the other extreme.

I would ask W. H. Y. if he was going

thirty or forty miles on the road, and was to carry a load of fifteen or twenty hundred pounds with a pair of horses, whether he would turn them into a rich fresh pasture, or a rank growth of aftermath, or feed them on rowen, or whether, before starting, he would feed them on good bright nice herdsgrass hay that was cut when just going out of blossom? The team, if the question were left to them, would choose, no doubt, one of the first mentioned varieties of forage, but the experienced teamster would much prefer the latter, as he has learned that a team fed on such hay, is better able to labor, consequently he concludes it contains more of the real substance.

Swale grass should be cut early, the earlier the better. Clover should be cut in the blow, but herdgrass, in my opinion, should not be cut until the seed had formed, especially that intended for horses that work. I do not believe much in cocking hay, unless it is very heavy. But just get the water out and wilt it a little, and put it right into the mow. If I think it is rather too green, I then sprinkle over every load, or every other load, a layer of old straw that is kept on the beams or scaffold for that purpose, and my hay invariably comes out bright. The straw takes the extra moisture and keeps the mow from burning.

As hay is the most important of all the crops raised in New England, give us, brother farmers, all the light you can on the best modes of securing it. G. H. CRANDALL.

Duxbury, Vt., May 15, 1871.

ANOTHER AGRICULTURAL AND HORTICULTURAL COLLEGE.

Some weeks since, at the suggestion of a correspondent, we made some inquiries in respect to the present condition of the "Bussey Farm," and its relation to Harvard College, and stated in brief the result of our inquiries. The following circular affords more definite information upon these subjects, and shows that arrangements for the establishment of an industrial branch of the college on the Bussey fund, were further advanced than we were led to suppose from the information we obtained, as it now appears that candidates for admission will be examined on the 28th of next September. The following is the circular referred to:—

Harvard University.—Bussey Institution.—A School of Agriculture and Horticulture. 1871-2.

INSTRUCTORS.—Asa Gray, LL. D., Professor of Botany; Thomas Motley Instructor in Farming; Josiah D. Whitney, LL. D., Professor of Geology and Geography; Francis Parkman, A. M., Professor of Horticulture; Daniel D. Slade, M. D., Professor of Applied Zoology; Francis H. Storer, A. M., Professor of Agricultural Chemistry; Nathaniel S. Shaler, S. B., Professor of Zoology; Francis G. Sanborn, Instructor in Entomology; John Trowbridge, S. B., Assistant Professor of Physics; William G. Farlow, M. D., Assistant in Botany; Charles L. Jackson, A. M., Assistant Professor of Chemistry; Pierre J. Boris, Instructor in French; ———, Instructor in German.

The School of Agriculture and Horticulture, established in execution of the Trusts created by the will of Benjamin Bussey, will give thorough instruction in Agriculture, Useful and Ornamental Gardening, and Stock-Raising. In order to give the student a sound basis for a thorough knowledge of these Arts, the School will supply instruction in Physical Geography, Meteorology, and the elements of Geology, in Chemistry and Physics, in the elements of Botany, Zoology and Entomology, in Levelling and Road-building, and in French and German.

The regular course of study, to be pursued by candidates for a degree, will fill three years. The instruction of the first year's course will be given at the Lawrence Scientific School, in Cambridge, and students of the first year must live in or near Cambridge. The instruction of the second and third years' courses will be given at the Bussey Institution, and students of the second and third years must live near the Institution, which is situated in the town of West Roxbury, near the village of Jamaica Plain, about five miles south-west of Boston, and close to the Forest Hills station on the Boston and Providence Railroad.

REQUSITES FOR ADMISSION.—Candidates for admission to the first year of the regular course of the School must be at least seventeen years of age, and must present testimonials of good moral character; they will be examined in Arithmetic, Algebra as far as quadratic equations, English Grammar, and Geography. Candidates for admission to the second year of the regular course must be at least eighteen years of age, and must present testimonials of good moral character; they will be examined upon the studies of the first year in addition to the above-mentioned subjects.

The first examination for admission will be held on Thursday, Sept. 28, 1871, at Lawrence Hall, Cambridge, beginning at 9, A. M.

Any person, who is not less than eighteen years old, may join the School, without examination, to pursue any special course or courses of instruction which he is qualified to pursue with advantage; but such special students will not be regarded as candidates for a degree.

BOND OR DEPOSIT.—[Tuition required in advance and a deposit of $50, or a bond of $200, as security for charges.]

ACADEMIC YEAR.—The Academic year begins on the Thursday following the last Wednesday in in Sept. (Thursday, Sept. 28, 1871,) and ends on the last Wednesday in June, with a recess from December 24th to January 6th inclusive.

INSTRUCTION.—Instruction will be given by lectures and recitations, and by practical exercises in the laboratory, the greenhouse and the field. Examinations will be held statedly, to test the student's proficiency.

REGULAR FIRST YEAR'S COURSE (AT CAMBRIDGE.)—The subjects to be taught during the year 1871-72, are as follows:—Physical Geography, Structural Geology, and Meteorology, Prof. Whitney; General Chemistry and Qualitative Analysis, Assist. Prof. Jackson; The Elements of Physics, Assist. Prof. Trowbridge; Levelling and Road-making, Prof. ———; The Elements of Botany, Prof. Gray and Assistant Farlow; The Elements of Zoology, Prof. Shaler; The Elements of Entomology, Mr. Sanborn; French, Mr. Boris; German, Mr. ———.

SECOND YEAR'S COURSE (AT WEST ROXBURY.)—Theory and Practice of Farming, Mr. Motley.—Preparation and care of manures and composts. Breeding and care of neat stock, with special reference to the dairy. Breeding of horses and swine. Preparation of the ground for root crops, hay, and grain. The sowing and planting of different seeds and roots for farm use. Field work with ploughs, harrows, and seed-sowers. Harvesting of hay and

grain. Use of mowing machines, hay-tedders, horse-rakes, &c. Examination of agricultural implements. Farm accounts.

Horticulture, Prof. Parkman.—Propagation of plants; the methods of practicing it, and the principles on which they rest. Propagation by seed; by cuttings; by layers; by budding, grafting, and inarching. Methods of obtaining new varieties of fruits, flowers, and vegetables. Horticultural glass-houses, their construction and management. The flower garden;—perennial flowering shrubs and trees; bedding plants; foliage plants; the rose; the lily; the rhododendron; the azalea; the gladiolus, &c. The fruit garden;—the strawberry, raspberry, peach, grape, apple, pear, &c. Nurseries and their management. Manual practice of horticultural operations.

Agricultural Chemistry, Prof. Storer.—Soil, air and water in their relations to the plant. The food of plants;—manures, general and special. Chemical principles of tillage, irrigation, systems of rotation, and of special crops and farms.

Applied Zoology, Prof. Slade.—The anatomy and physiology of domestic animals. Their proper management in health and disease. Epidemics,—their nature, progress, mode of introduction and proper treatment.

Entomology, Mr. Sanborn.—Habits or economy, anatomy and transformations of insects; their embryonic development, and their relations to the surrounding world. Means of controlling or keeping in check the increase of injurious species. Systems of classification. Collection and preservation of specimens.

Quantitative Analysis, Prof. Storer.—Laboratory practice. Methods of analyzing rocks, manures, plants, milk, &c., and of investigating problems in agricultural chemistry.

The third year's course of instruction will be hereafter arranged, and will be given for the first time in the Academic year 1872-73.

During the first year of the regular course the student will be expected to pursue with equal diligence all the subjects prescribed for that year; but during the second and third years the student's course of study, particularly as regards the amount and direction of his manual practice, may be varied at the discretion of the Faculty of the School, in accordance with the student's aims and purposes.

Women will be admitted to the courses of instruction in horticulture, agricultural chemistry and entomology at the Bussey Institution.

FEES AND EXPENSES.—The regular fee for the academic year will be $150; for half or any less fraction of a year, $75; for any fraction of a year greater than one-half, the fee for the whole year will be charged. The fees for special courses of instruction are as follows:—For the course on Farming, on Horticulture, on Agricultural Chemistry, and on Applied Zoology, each $40 for the year; on Entomology, $20 for the last half of the year; Laboratory instruction in Quantitative Analysis (including the course on Agricultural Chemistry) $150 for the year.

The tuition fees will be freely remitted to poor and meritorious students.

The other expenses, including board, of a student for an Academic year may be estimated at from $246.00 to $502.00.

The teachings of the School will be amply illustrated by the rich scientific collections of the University, and by a botanic garden, a large and profitable farm, greenhouses, propagating houses, and field experiments. The single object of the School is to promote and diffuse a thorough knowledge of Agriculture and Horticulture. For further information, apply to

JAMES W. HARRIS, Secretary,
Cambridge, Mass.

AN INGENIOUS SWINDLE.

The frequent reports of farmers signing what they suppose to be a receipt or an agreement with some unknown travelling agent, and afterwards finding their names attached to a note of hand, seem almost incredible, to those not acquainted with the plausible representations of these sharpers, or who do not consider how liable every person is to be taken in who harbors the idea that there is some easier way of obtaining a dollar than the old fashioned one of earning it. The young person or the old person who is waiting for something to turn up, or watching for a streak of good luck, or looking for some short cut to wealth, is an admirable subject for operation, and when we consider how numerous this class is,—how many are anxious to get a living without work,—we cease to wonder at the success of humbugs and humbuggery. The following is one specimen of the means by which farmers at the West have been swindled. Entire, it is a very simple agreement, fair and safe, for a little speculation by which a few dollars can be realized easier than by raising wheat or stock, and is as follows:—

SPRINGVILLE, ILL., April 15, 1871.

One year after date, I promise to pay A. Sharp or bearer ten dollars when I sell by order, Two Hundred and Seventy-five dollars worth of Seeding Machines for value received, at ten per cent. per annum, said Ten Dollars, when due, to payable at Springville, Ill. RICHARD ROE, *Agent for A. Brown.*

Witness: JOHN ROE.

But the agent cuts the "agreement" in two between the words "or" and "bearer" in the first line, severing the right hand portion, and he has a perfect note for $275. He then proceeds to the nearest broker or banker, to whom he offers to sell the note at a discount, on the plea of needing the money. The signer is generally a responsible person, well known to the business men of the village, and the note is purchased. When the note falls due it is presented for collection, and as the signatures are indisputable, the horrified farmer is compelled to pay $275, when he supposed that he agreed to pay only ten dollars, out of each two hundred and seventy-five dollars received for the right to use a patent seeding machine.

BEET SUGAR ON THE COLLEGE FARM.—We learn by the "Massachusetts Agricultural Department" of the *Amherst Record* that five acres of land have been carefully prepared, and the imported sugar beet seed sown. A factory for the manufacture of sugar from this source, will be built on the farm before the crop is ready to harvest in the fall, and the product of the five acres, together with what

outside parties contribute, will probably reach one hundred tons of raw material. Many farmers in the vicinity have interested themselves in this new feature of farm produce, and we hope that the manufacture of sugar from the beet, which has thus far proved unsuccessful in this country, will eventually prove as profitable here as it has done in Europe.

For the New England Farmer.

BOTANY FOR FARMERS.

AN INTRODUCTION TO THE STUDY OF BOTANY, FOR YOUNG FARMERS, AND FARMERS' SONS.

Every farmer should possess a general knowledge of the science of botany. Especially should young farmers and farmers' sons acquire a tolerable acquaintance with this highly interesting and useful branch of natural history. The excellent treatises of Gray and Wood, to say nothing of other works of real merit, will enable any person of average intellect to become a good practical botanist; and that, without the assistance of a teacher. It is necessary, only, that he devote a considerable portion of his leisure moments to careful study, and examine closely the trees, plants, weeds, and flowers by which he is daily surrounded. Indeed, the time that is wasted, and oftentimes worse than wasted, by most young persons, would, if devoted to the perusal of books on Botany, Chemistry, Geology, Mineralogy, Physiology, &c., make them well acquainted with the general principles of natural science; and while contributing essentially to their mental gratification, bodily health, and the more successful prosecution of their business, would also enlarge and improve their hearts by leading their thoughts from Nature up to Nature's God.

We earnestly hope that what we shall say in this article concerning the first principles of botany, may induce the young readers of the NEW ENGLAND FARMER to avail themselves of the abler and more extensive works above mentioned, and thus become, as they surely can, thoroughly acquainted with this most interesting study.

BOTANY treats of the Vegetable Kingdom. It considers the forms, organs, structure, growth, and uses of plants, together with their history and classification. The VEGETABLE KINGDOM comprises two great branches, or grand divisions,—*Phænogamous* or flowering plants, and *Cryptogamous* or flowerless plants.

PHÆNOGAMOUS PLANTS bear true flowers, and produce seeds having a seed-leaf or seed-leaves. Each seed-leaf is called a *cotyledon*, some plants having one, and some two cotyledons or seed-leaves. In the cotyledon is enveloped a ready formed *embryo*, which is the germ of a new plant. Phænogamous plants include all the higher forms of vegetation, and are naturally divided into two classes or sub-divisions,—*Exogens* or outside growers, and *Endogens* or inside growers.

3

The CLASS EXOGENS comprises all plants whose stems are composed of three distinct parts—*pith* in the centre, *bark* outside, and *wood* or *woody substance* between the two. All trees, except the palms belong to this class, as do most herbaceous plants of temperate regions. Exogenous plants have *net-veined* leaves, and bear seeds with two or more *cotyledons* or seed-leaves; hence, they are often called *Dicotyledonous* plants. The two parts into which a bean, a pumpkin seed, or an apple seed readily divides, and which form the first two leaves of the young plant are the cotyledons.

The Exogens all grow by additions to the outside,—a new layer being added just beneath the bark each year; and thus the age of the tree or shrub is indicated by the number of concentric rings exhibited by a cross section of its trunk or stem. This class naturally divides into sub-classes,—*Angiosperms* or covered-seeded plants, and *Gymnosperms* or naked-seeded plants.

The ANGIOSPERMS comprise all exogenous plants which bear their seeds in a *pericap* or seed-vessel, which is the case with all of the plants belonging to this class, except the cone-bearing trees, and a single family of tropical plants.

The GYMNOSPERMS comprise those plants which bear their seeds attached to the inner surface of a scale. Such are Pines, Hemlocks, Spruces, Cedars, Larches, and other cone-bearing trees.

The CLASS ENDOGENS embraces all flowering plants whose stems are not composed of concentric layers, but whose woody substance is distributed through the stems in threads and bundles. Plants of this class have *parallel-veined* leaves which surround the stem like a sheath, and decay without falling off; and they bear seeds with only one cotyledon or seed-leaf. Such are the Grasses, Indian Corn, and other kinds of Grain, the Field Lilies, Solomon's Seal, Lily of the Valley, the Palm-Tree, Sugar-cane, Bamboo, &c.

CRYPTOGAMOUS PLANTS do not bear real flowers, nor do they produce seeds with a cotyledon, or with cotyledons; but they produce something analogous to flowers, and are propagated by *spores* instead of seeds. These spores are minute, dust-like bodies, having neither integuments nor embryo, but produce their root and stem indifferently from any point of their surface, instead of germinating from a fixed point, as is the case in phænogamous plants.

This grand division, CRYPTOGAMIA, comprises all the lowest forms of vegetation on the globe, and is divided into three classes, as follows: 1st, ACROGENS, which includes those plants whose growth is wholly or mainly at their summit, as the *Ferns*, commonly called *Brakes*; the *Club-mosses*, or those evergreen, trailing plants found in pastures and woodlands, and often gathered for festoons, &c.,

to adorn our houses, school-rooms, and churches; and the *Horse-tails*, (*Equisetaceæ*,) or those brown, leafless, jointed stems, six or eight inches long, which are found everywhere in early spring, and in those other stems of similar appearance, two or three feet high, which grow near streams, and contain so much *silica* or flint that they are used for scouring, and hence are called Scouring Rushes. 2d. ANOPHYTES, which comprise all the true mosses. 3d. THALLOPHYTES, which include the *Algæ*, or sea-weeds and the like; the *Lichens*, or those incrustations and leaf-like expansions found on rocks, trees, and fences, and the *Fungi*, or toadstools, mould and various microscopic plants.

The grand division, PHÆNOGAMIA, we have already remarked, is subdivided into two classes: *Exogens* or outside growers, and *Endogens* or inside growers. The seeds of the former having two or more cotyledons, the plants are called *Dicotyledonous*; and the seeds of the latter having but one cotyledon, the plants are called *Monocotyledonous*.

Again, this grand division is divided into one hundred and fifty-six or more NATURAL ORDERS, each of which is distinguished from every other by certain well marked features. These orders are each divided into several GENERA, (the plural of Genus,) and each Genus is divided into several SPECIES, and some Species are divided into several VARIETIES. Examples: ROSACEÆ or *Roseworts*, is the name of an order, in which are twenty-eight genera, according to Hood. The name of the thirteenth genus of this order is PYRUS, which contains seven species. 1. Pyrus *Communis*, or the Pear Tree; 2. Pyrus *Malus*, or the common Apple Tree, &c., &c. Of each of these species there are several varieties.

COMPOSITÆ is the name of another order which contains one hundred and fifteen genera. The name of the sixty-ninth genus is ANTHEMIS, which contains two species, one of which Anthemis *nobilis* or common Chamomile, will be readily recognized by most persons.

UMBELLIFERÆ is the name of another order which contains nearly forty genera, one of which is named DAUCUS; and here we have the Carrot—Daucus *Carota*, &c., &c. But the limits of this article will not permit us to extend our remarks in this direction.

Plants are distinguished as to their term of life, into *Annuals*, *Biennials* and *Perennials*. An ANNUAL is a plant whose entire life is limited to a single season. It germinates from the seed in spring, attains its growth, blossoms, bears fruit and dies in autumn, as Indian Corn, Flax, the Poppy, Morning Glory, &c. A BIENNIAL is a plant which germinates and vegetates, bearing leaves only, the first season; and blossoms, bears fruit and dies the second, as the Beet, Cabbage, Turnip, Carrot, &c. A PERENNIAL is a plant which has an indefinite duration of life, usually of many years. Perennials are either *herbaceous* or *woody*. HERBACEOUS PERENNIALS are plants whose parts are annual above ground and perennial below ground, as the Lily, Dandelion, Hop, Potato, &c. WOODY PERENNIALS vegetate several years, and attain nearly their ordinary height before flowering. They are known as Trees, Shrubs, Bushes, &c.

Trees, shrubs and bushes are distinguished as *Deciduous* and *Evergreen*. The former losing their leaves in autumn and remaining naked until the following spring; the latter retaining their leaves and verdure throughout the year. The *Coniferæ*, or Fir tribe, includes nearly all the evergreens of the North, as the Pine, Hemlock, Cedar, Spruce, &c., &c. Those of the South are far more numerous in kind, as the Magnolias, Live Oaks, Hollies, Cherries, Palmettoes, &c., &c.

The Phænogamous plant in its earliest stages of life is an *embryo*, contained in a *seed*, and consisting essentially of two parts, the *Radicle* and the *Plumule*. After the seed begins to germinate or grow, the embryo extends itself in two directions to form the *axis* of the plant. The *radicle* or root-end grows downward, as if to avoid the light, and forms the root or *descending axis*; while the *plumule* taking the opposite direction ascends, seeking the light, and forms the *stem* or *ascending axis*, bearing the leaves, &c.

The ROOT is the basis of the plant, and serves to support it in position, and to imbibe from the soil the food and moisture necessary for its growth. Roots are of various forms, and are named according to their form, as *tuberous*, *fibrous*, &c.

The STEM, or ascending axis, with its branches, is that portion of a plant which bears the leaves, flowers and fruit. The stem of the grasses is called the *culm* or *straw*. The stem of a tree is called its *trunk*.

The LEAVES of plants constitute their verdure and beauty, and place them among the most conspicuous and pleasing objects in the scenery of nature. They are also the organs of *digestion* and *respiration*, being to the plant and the tree what the *stomach* and *lungs* are to the animal; and hence they are of the highest importance in the vegetable economy. Leaves are *radical*, when they grow out of the stem at or beneath the surface of the ground; *cauline*, when they grow from the stem; and *ramial*, when they grow from a branch. They are *alternate* when one is placed above another, on opposite sides, as in the elm; *scattered*, when irregularly spiral, as in the potato vine; *rosulate*, when clustered regularly, as in the plantain; *fasciculate*, when tufted or clustered together, as in the pine, larch, &c.; *opposite*, when two are against each other, as in the maple; and *verticillate* or *whorled*, when more than two are in a circle, as in the meadow lily, trumpet weed, &c.

The footstalk or stem, by which most leaves are attached to the trunk or its branches, is

called the *petiole*. This divides into numerous branches called *veins*, which constitute the frame-work of the leaf. They are woody tubes, and convey to and from every part of the leaf, the *sap* or nourishment of the plant or tree. Leaves assume a great variety of forms, and have received names to correspond.

The FLOWER of a plant is an assemblage of beautiful leaves, delicately and variously formed, and placed at the upper nodes or joints of the axis or stem. The upper extremity of the flower-stalk is called the *receptacle*. The flower may be, and assuredly is composed of the following members: 1. The *Floral Envelops*, consisting of *Calyx* and *Corolla*; 2. The *Essential Floral Organs*, consisting of the *Stamens* and *Pistils*.

The CALYX is the cup-like organ which surrounds the flower, the leaves of which are called *Sepals*, and are usually green, but sometimes highly colored.

The COROLLA is the interior envelop of the flower, and is usually colored,—the leaves are called *petals*. The calyx and corolla together, constitute the *perianth*.

The STAMENS are those thread-like organs situated within the corolla, and on the top of which are small oblong bodies called *anthers*, which furnish the dust-like substance called *pollen*.. Stamens vary in number from one to a hundred or more; but the most common number is five.

The PISTILS occupy the centre of the flower. The parts of a pistil are the *ovary* or *germ* at its base, the *stigma* at its summit, and the *style* which connects the stigma and ovary.

The process of *fructification*, or fruit-bearing in plants, is commenced by the absorption of the pollen, as it is discharged upon the stigma or extremity of the pistil. The FRUIT of a plant consists of the *pericarp* and *seed*.

The PERICARP is the envelop of the seeds, and varies greatly in different plants in texture, substance and form. Examples: The *Glans* or *Nut*, as the Chestnut, Beechnut, Hazlenut, &c. The *Drupe*, as the Peach, Cherry, Plum, and other stone fruit. The *Berry*, as the Currant, Grape, &c. The *Pepo*, as the Melon, Cucumber, &c. The *Pome*, as the Apple, Pear, &c. The *Legume* or *Pod*, as in the Bean, Pea, &c. The *Strobile* or *Cone*, as in the Pine, Spruce, Hemlock, &c., &c.

For further information concerning the vegetable kingdom, we refer our readers to "How Plants Grow," "School and Field Book of Botany," "Manual of Botany," and other works, by Prof. Asa Gray, M. D., of Harvard University; also, to "Class Book of Botany," by Alphonso Wood, A. M., principal of Brooklyn Female Academy, N. Y.

J. H. STEDMAN, M. D.

West Brattleboro', Vt., May, 1871.

—In many parts of the Western States, potato bugs are creating great consternation. The potato crops in several localities are reported as being in danger of utter destruction by these pests.

For the New England Farmer.

APPLICATION OF MANURE.

Much is said and written on the subject of manure and its application to the soil, but none too much, for it is important that farmers should know the best way of applying manure to their fields in order to obtain the most profit therefrom.

I propose to give a little of my experience in this matter, hoping that others more experienced and more capable will do the same, as information is what we want and what we need. About thirty years ago the *Maine Farmer* advocated deep ploughing, as a remedy for land that had begun to fail to produce good crops, and in order to test this theory we spread on the grass ground, at the rate of twenty cords to the acre, new manure taken from the heaps, and ploughed it under to the depth of ten inches, harrowed the ground well, planted to corn, and got a very poor crop. At least two other farmers in my neighborhood pursued the same course, with about the same results. Of course all of us came to the conclusion that manure ploughed under to that depth was about the same as thrown away; for the land did not produce well until dressed on top. Since then we do not plough manure under deeper than from three to five inches and raise as good crops as any others in this section.

As I want to ask some questions, I will tell you how I raised my corn last year. Five years before, twenty loads of manure taken from under my barn shed were put in a pile in this field, where it remained until last Spring, and had become pretty well grassed over. Late in the fall of 1869, twenty loads of manure were put in a pile near the first pile. In the spring of 1870, twenty loads were spread on two acres of ground, which was pretty well run out for grass, and ploughed under to the depth of three to five inches, the ground was then harrowed and furrowed four feet apart. The old manure was taken and put in the hill at the rate of about half a shovelful with about a tablespoonful of Cumberland Superphosphate mixed with the manure, and the corn was planted from the 27th to the 30th of May. It came up and grew finely, and was cultivated and hoed when it was about ten inches high. I did not stir the ground in the hills, as I think it stops the growth of the corn. It was hoed only once, but was kept clear of weeds by pulling them up by hand.

When the corn was about two feet high some cattle drovers were here from Kennebec, one of whom, on passing the field, said, "Jones, what a splendid piece of corn you have got. What makes it grow so? Why, I have not seen any like it this season; in fact I never saw so handsome a piece of corn in my life. What kind of corn do you plant?"

When I was husking my corn, people, com-

ing along, would say, "What nice corn you have got. What long ears. I must have some to plant. Why, here is an ear 13½ inches long, of good sound corn, well filled out; and here are plenty more 12 inches long, and, look! here are two ears that grew on one stalk that, together, measure, 23 inches, of well filled corn. Where did you get this seed?" My answer was, I got the seed of my friend John Currier, down in St. Albans. He has raised this same kind of corn on his farm for thirty years. The reply was, "well I should like to raise such corn as this if I could." I told them, you can if you have got as good land as I have and don't plough in your manure too deep.

My corn did not suffer any from drought, —not a leaf rolled at all, nor did my other crops suffer much, as you will see from what the yield was:—Wheat 20 bushels to the acre; Barley, 35, Oats 40, Potatoes 200.

Now, what I want to know is, What made my corn grow, if manure is spoiled by being exposed to the sun, wind and rain, or when applied as surface dressing? And, as I plough shoal, and stir the ground no more than is absolutely necessary, why did not my corn all dry up and die as I have seen it in the western part of this State? Why does my land produce nine tons of hay on three acres of ground, if using old manure, shallow ploughing and surface manuring is bad policy?

I have had a notion for some time that a year's supply of wood beforehand, and a year's manure ahead, were both very convenient to have, and as I think, quite profitable.

JOHN L. JONES.

Maine, May, 1871.

SALT FOR THE CORN-GRUB.—The corn crop has several formidable enemies to contend with, and among them is the grub, which sometimes literally destroys whole fields, or damages the crop seriously. One of the best and most convenient remedies—perhaps the very best ever suggested—is the application of *salt* as soon as the plant makes its appearance above ground, prepared and used in this way: Take one part common salt and three parts plaster or gypsum, and apply about a tablespoonful *around* each hill. It will be found to be a sure protection. The mixture should not come in contact with the young plants, as it may destroy them. This method has been tried over and over again by some of the best farmers of Pennsylvania, Delaware and Jersey, and when properly applied has never failed to be perfectly successful. We hope our farmers, who have reason to fear the depredations of the grub, the present season, will try this mixture, leaving a few alternate rows of corn without the salt, and communicate to us the result. The application also acts as a first-rate fertilizer and will more than pay for itself in benefiting the crop.—*Germantown Telegraph.*

EXTRACTS AND REPLIES.

TO RELIEVE CHOKED CATTLE.

A reader of the FARMER who was in the office recently said that he had had a good mind to write an article for the paper himself, because he thought he could tell farmers and others who have cattle liable to be choked, of the very best way ever discovered to relieve them. He did not know whether it had been described in the agricultural papers or not, but said if it was generally known, he thought there would not be so many inquiries about what to do for choked animals, as this was a sure, safe and certain remedy every time. Get a piece of new tarred rope, four feet long and about one inch and a quarter in thickness or diameter. Don't wait till Old Brindle has got a potato or a chunk of a turnip fast in her gullet, but get the rope now, or the next time you go to the store. Then with a strong cord or waxed thread, begin, say, two inches or more from one end of the rope and wind it snugly and smoothly to within about one inch of the end and fasten the cord by passing it through the rope, or otherwise, as you can best do it. Then pick or broom up the extreme end until a soft cap is formed, the edges of which will fall over on to the part wound. This is to guard the throat from danger of injury when used to start the obstruction, therefore it should be nicely prepared. This is all the instrument required for successful practice, and now hang it up or lay it away in some handy and safe place, ready for operation. Before putting it into the throat of a choked animal, grease it well with lard or oil, and if faithfully used, a cure is perfectly certain, judging from past success in the most desperate cases that have come to the knowledge of our friend, since he has used such a probang. It is sufficiently flexible to conform to the natural bends of the throat, and stiff enough to remove any obstruction that he has ever known to get into an animal's throat.

HINTS TO FARMERS' WIVES—NO 2.

But first, Mr. Editor, I know of one farmer's wife who has had a pretty broad *hint;* for No. 1 of the above heading was sent to the FARMER full two years ago; and for a year and a half it was supposed to have been consigned to the waste basket, or perhaps used to light the editor's pipe. But last October the Monthly NEW ENGLAND FARMER come to hand containing the identical No. 1!

Now, methinks, I am at liberty to write again, but the time of a farmer's wife is not always at her disposal. However, as the spring months are now bringing an increase of work, I must take a little time and write a word which mayhap will ease the burden of work to some weary sister. Think of the house cleaning, washing windows, sweeping and dusting, taking up carpets, washing floors, carrying water up and down stairs, cleaning closets and attic, where perhaps the dust of a year has been collecting. In all this work nearly every woman wears a dress nearly if not quite touching the floor, and very many wear hoops also. Shall you put me down in your minds as a "strong-minded" woman if I strenuously recommend a short dress, as befitting such work?

There are many in this neighborhood who wear

a short work dress, and they are refined and intelligent ladies for a' that. In washing, churning, scrubbing floors, and in going up and down stairs with both hands full, such dresses are much easier to get round in. There is no dragging in the slops, and the extra weight of dress and skirt thus taken off allows much greater freedom in walking. While gardening, don't *ever* put on a long dress to work among your flowers. With good stout high shoes and a dress which lacks nine inches of reaching the ground, and a broad brimmed hat, it is a pleasure to work in the garden.

I am aware that very few, perhaps none, will ever give this matter a second thought; but no lady can know till she tries it how much weariness it will save her. E.

May 15, 1871.

REMARKS.—And we know of one editor who has had a pretty "broad hint;" but you must not class him with those who will "never give the matter a second thought." He will remember it as long as he lives. Why, he is so ashamed of himself that he will make any sort of apology that may be demanded that would not compromise his veracity. Think of a lady's *offer*-ing being pigeon-holed a year and a quarter!—a sensible, well written, pointed one at that! "It was sent full two years ago." That would bring it right into the editorial harvest of articles written during the long evenings of the previous winter. Some of these must be reserved for the editorial drought of summer and fall. Those that are appropriate to any season are laid aside, and seasonable ones, those that will not keep, are "given out." But this apology is not good for a whole year. Your communication, then, must have got into some sly corner,—don't things in your work basket or draw sometimes do so?—and was overlooked. But you say your article came to light in October. It was printed in the Weekly FARMER of September 3. So please give us credit for one month. Every little helps in such a desperate case!

THE HORSE RACE AND THE FARMERS' FAIR.

I am moved to duty by reading the able article of Brother Comings, (I say brother) because both are interested in the same cause.

Who are to blame for our fairs being managed by dishonest and immoral men? No one but ourselves. We have been negligent and idle, and have allowed the fast men to take the reins out of our hands and drive off with our own team. Brother farmers, let us awake and take care of our interests in the future, by managing them ourselves or by employing those who sympathize with us. As the officers of our societies have heretofore been constituted, it has too often been the case that if you spoke to one of them about a change of premiums from fast horses to horses of usefulness, and to the best cattle, sheep, hogs and poultry, or farm produce, his answer has been, "We cannot raise the money to pay the expenses of our society without these attractions."

But are not the necessary expenses of a farmers' fair greatly over-estimated? Dissolve partnership with the whole fast-horse influence, let them provide their own race-course, judges' stand, spectators' seats, police officers, &c., &c., and the necessary cost of providing for an old-fashioned cattle show and farmers' fair would be very small. We could have things in our style at comparatively small expense, while our fast friends could expend as much as they pleased, enjoy their old-fashioned horse race, with its gambling, betting and other "attractions" as they ever have been enjoyed on all race courses.

Now, brother farmers, we must do something more than talk and scold; we must *act*. Let us turn out at the next meeting of our society, feeling that we have not only rights but duties to discharge,—let us realize that on us rests the responsibility of deciding the character of our annual fair,—of determining whether it shall be an agricultural exhibition or a mere horse race.

I would suggest that no money be expended for a track, as we need none. If we have not enough cash to fence the grounds this year, the exhibition may be free. Let the premiums, however small, be arranged so as to enlist the interest of boys and girls as well as men and women. With the races omitted there would be time to notice the boy with his trained steers, and for his older brother to show his skill in ploughing, and the proficiency of girls and ladies in driving the family horse, and for a more careful examination of the products of the field and fireside—of the farmer's home industry and ingenuity. F. N.

Plymouth, N. H., May, 1871.

COLORADO TEN-LINED POTATO-BUG.

I planted some Early Rose potatoes April 6. They started finely, and up to yesterday they grew finely and were looking first rate; indeed, I never saw any looking better. Yesterday I found hundreds of bugs upon the vines threatening their destruction. I enclose specimens. What are they, and what shall I do to destroy them?

JOSEPH BARBER.

South Bend, Ind., May 15, 1871.

REMARKS.—Though somewhat bruised, and broken in the mail-bags we have no doubt that the Colorado Ten-lined Potato-bug has reached your farm, in its grand eastern march. Sprinkling the vines with white hellebore, brushing them from the vines to be immediately covered by a furrow, are among the remedies that have been tested, but we do not know how far successful any remedy has proved in actual practice and on large fields.

SHOEING HORSES.

One of the modern improvements we do not approve of is "the paring and burning process" as applied to horses' hoofs.

FURNISHING TOOLS.

A correspondent of the FARMER, in recently commending farmers to a careful housing and providing of good tools, takes occasion to observe that when help is two dollars a day,—or something to that effect,—it is important to provide good tools. When we pay a man that price for an ordinary day's work, we look out that he provides himself the needful shovels, hoes or other tools.

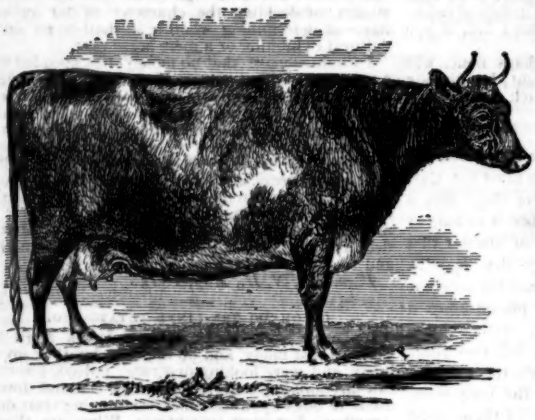
Blue Hills, Mass., 1871. AMERICUS.

AYRSHIRE STOCK.

Some of the reasons why this breed are the best for most New England farmers are the following: They are a *hardy* race, able to withstand the vicissitudes of our climate and readily accommodate themselves to a warm, well littered stable, or to the bleak, northwest corner of a rickety old barn. They will keep sleek and fat as otters on low land, wire and meadow grass and rushes, where a Durham would get stuck in the mud and pine away in disgust; they rapidly fit themselves for the shambles on hills so steep and high that a Durham would faint away from exhaustion, before getting

half way up. Yet they can do well on the Kentucky blue grass, and will easily learn to eat the clover and meal required by Short-horns.

I think there is no *one* breed so well adapted to the *three objects*—the dairy, beef and draught—for which neat stock is wanted by the small farmers of New England, as the Ayrshires.



Ayrshire Cow.

As to *quantity of milk* in proportion to the *cost of food* consumed, there is no other breed that can equal the Ayrshires by "a long shot." And as to *quality* they have no equals but Jerseys. As to *amount of butter*, according to cost of food, they are above all others; and to the *quality* of butter, all things considered, they are unsurpassed. Jersey's butter is more "gilt-edged," and may taste better to the *eye*, but not to the palate. Possibly the extra *oily* quality of Jersey's butter is the reason of its not keeping well. For the purpose of producing milk for sale or for making cheese, the Ayrshires are "head and shoulders" above all others, according to size and cost of keeping.

The Jerseys are good for cream, but hard to keep in decent order; very difficult to fatten when it is desired to turn them to beef, and too small and frail for oxen. The Durhams are good for beef, with sufficient quantity of the best quality of feed; but third-rate for the dairy, according to size, and too large and "logy" for oxen.

The Ayrshire can be fitted for beef of the first quality as quickly and cheaply as anything else on hoofs; and for oxen I don't think they can be beaten, judging from their general characteristics of hardihood, energy, ambition, intelligence, docility, similarity of color, vivacity or quickness of motion and good size.

These things being so, it is not difficult to see why there are so few of them advertised for sale compared with Durhams and Jerseys. Those who have with much difficulty obtained this breed for practical use, as I have, like them too well to sell them (unless they sell their farm, get out a score of patents and wish to move to Chicago, like myself;) and those who make a business of stock raising on a small scale find ready customers without advertising.

I have found it just about as easy to sell my pure bred calves for twenty-five to fifty dollars, as to sell "scrubs" of same age for fifty cents, and suppose others have the same experience; and I feel a good deal better keeping a cow that weighs from six to nine hundred pounds, and makes ten to twelve pounds of the best butter a week, for five consecutive months, than when keeping one of the same size that makes but half as much of poorer quality.

R. NUTTING.

Randolph, Vt., May, 1871.

APPLICATION OF MANURE.—FOLLOWING NATURE.

The subject of manuring or enriching the soil is a very interesting one to me, and I suppose it is to all farmers in New England. Our field crops seek their nourishment in the ground by roots which hide themselves in the earth, and hence I think it is reasonable that manure should be ploughed into the soil. Another thing leads me to favor ploughing in instead of applying it to the surface, is the liability of the most valuable portions of the manure being washed away, where land is liable to be washed. In reseeding land without other crops, I believe that the amount of manure usually applied to the surface would do better and make the grass hold out longer if it were ploughed in.

The advocates of surface manuring often claim that Nature favors their plan, and say that she always deposits her fertilizing materials—leaves, decaying wood, &c.,—on the top of the ground. But how much force is there in this illustration, were we to admit its literal correctness? This, however, we can hardly do, when we think of the various ways by which nature mingles the materials of the earth's surface by the washing of water, by the slides and avalanches among mountains, the heavings of volcanoes, &c., by which nature does some pretty deep ploughing and thick covering.

But is not cultivation based rather on artificial than natural principles? Is it not a war against as well as a co-operation with nature? Is not man endowed with capacities and powers which fit him to control and subdue nature? We fell her trees; we grub up her roots; we displace her rocks; change her water courses; hoe up and destroy her favorite plants, and call them weeds. If nature had her course would there be any cleared land, any ploughed ground, any fields of any description; any garments to hide our nakedness; any dwellings or barns for ourselves or our stock?

But if we admit that the top-dressing of our fields is in accordance with nature, does this prove it to be the most economical? See how much of Nature's dressing is lost to the soil to which it is applied,—how much floats off in streams to enrich distant intervales or to be engulphed in the ocean, and how much has been lodged in bogs and swamps for the benefit of other land than that upon which the fertilizing matter was originally deposited. Nature may afford such a wasteful application of manure as this, but I cannot. My resources are not equal to hers. I cannot afford to fertilize distant fields in which I have no interest, but must provide for my own. Hence I endeavor to keep my manure in the soil.

I am trying a number of experiments this year with muck, being encouraged to do so by seeing how completely filled with roots and fine fibres muck is that I have applied to my orchard. I have put some clear muck in the hill for various crops, and have composted some with lime and salt, and if nothing prevents will note the result.

While reading the various opinions of farmers in your paper, I have often wanted to make some reply, but aware of my ignorance of grammar and all the rules of composition, I have never attempted

to do so till now, and perhaps you will think I had better waited awhile longer,—but here goes either for waste basket or Extracts and Replies.

C. L. DRAKE.

SINGING BIRDS.—CURRANT WORMS.—EARLY POTATOES.—FRUIT BLOSSOMS.—MOLLIE JERSEY.

When I am awakened in the morning by the singing birds, and go out into the wonderfully clear air and see the dew sparkling on every blade of grass and tipping every green leaf with a diamond point, I pity those poor people who are confined in the hot dusty city; but when I see currant worms and canker worms, bugs, beetles, moths, millers, and flies destroying and spoiling every thing in their way, I am almost tempted to say I would rather dwell in the city.

But we rather have the upper hands of the currant worms,—the unsightly, green, wriggling things! Last summer, in common with many others, we suffered from fire; losing not only a carriage shop, but also apple and pear trees, grape vines, strawberry plants, and two long rows of currant bushes. The currant worms were revelling in them a few weeks before. They cannot do much at it this year, as the bushes are up only a few inches, having been cut down to the ground in the fall; but the worms will probably make the best of what foliage there may be.

Last year we tried whale oil soap,—the worms grew fat upon it; tobacco soap rather subdued them; strong soap suds were only a grateful shower; and water made strong and dark with droppings from the hen roost had much more effect upon the user than upon the worm. This year we shall try carbolate of lime. They made their appearance yesterday, May 22.

The canker worm has not shown itself as yet, it being too early for them. A few caterpillars are to be found.

Apple trees are not blooming well. Only one, here and there, is to be seen full. Pear trees are blooming better. There is some complaint of their being winter killed. We have two that started well early in the spring and budded profusely, but are now entirely dead. One is a small, the other quite a large tree. What do you suppose the matter is? They were treated in every way like the rest and started as well. Do not know their names, as we also lost in the fire the plan of the pear orchard whereon the names were marked—but think the large one is a winter Nelis.

Peach trees are blooming splendidly, and cherry trees have been a perfect bouquet of white blossoms.

Early Rose potatoes and Breese's King of the Earlies were planted the same day and came up at the same time. Early peas have not come up well, but later sorts are looking finely.

"Mollie Jersey" dropped her calf four weeks ago to-day, having gone dry nine days. She gave a pint of milk when we left off milking her. The calf was a handsome fellow, but, alas, he is in the butcher's hands to-night! We have sold fifty pounds of butter. The cow gave four quarts and a pint to-night. Will try and keep an account of the quantity of butter she makes this year. As for quality it is A No. 1,—"gilt edged," perhaps. Her September butter is as sweet as a nut to-day.

S. B. SAWYER.

West Amesbury, Mass., May 23, 1871.

P. S. May 24. Last night, we rode from this place to Newburyport, some eight miles. The air was loaded with the perfume of the apple blossoms, and we were much gratified to see the trees blooming so much more fully than with us. If blossoms portend fruit, it will not be so very scarce. We saw large beds of strawberry plants white with blossoms, and potatoes so large as to make a grand show, having been hoed once.

S. B. S.

REMARKS.—From the sprouting of the seed to the ripening of the fruit, pear trees are subject to failures and death, especially on dry, light soils. Whether your trees were killed by the drought of last summer, fall and winter, or whether some other cause blighted them, we cannot say with any degree of certainty, but their showing signs of life in the spring and then failing to leaf out fully are no unusual circumstances.

FOUR DEAD HEIFERS.

I have lost four out of the sixteen head of cattle that I took to the barn last fall. They were all heifers that I raised myself. They died very suddenly, having no symptoms of disease that I noticed twenty-four hours before death. All the information that I have been able to get is from a book, "The American Veterinarian," by S. W. Cole, from which I have been led to suppose that the disease might have been chronic red-water or dry murrain, but the remedies put down in that book have not given me satisfaction. I have eleven now, nearly all of which I think have had the same disease and are not entirely clear from it now, with the best doctoring I could give them.

West Sutton, Mass., May, 1871. N. LACKEY.

REMARKS.—While we sincerely sympathize with our correspondent in the loss of his young cattle, we have no means of ascertaining what the cause may be, as no symptoms are given. If the disease is red-water it would be attended by some very striking symptoms, as the urine would be discolored. A murrain of any kind would present symptoms of a very different character.

As a remedy for red-water, Mr. Allen, in his excellent work on "American Cattle," says that purgative medicines are the best, and recommends the following:—Mix Castor oil, 6 ounces; Saltpetre, 1 ounce; Epsom salts, 4 ounces; thin gruel, 1 quart.

If the animal is frequently endeavoring to stall, voiding only a small quantity, with considerable pain and difficulty, he recommends mucilaginous drinks,—such as an infusion of flax seed and a decoction of marshmallows, are most likely to afford relief.

Have your cattle had access to fresh paint or any other poisonous matter? The diseases of domestic animals and man are so similar in their character that we think the family physician ought to be more frequently consulted by farmers in case of illness among their stock than is usually done. Especially in cases where the cause of sickness or the nature of the disease is unknown. The questions which a medical man would ask and the examination he would make would probably enable him to give you valuable advice, which from your statement we cannot do.

A GOOD COW DRYING UP.

I have a cow that dropped her calf the first of April, and did well; but within two or three weeks she has commenced to dry up in one of her teats. She does not give one-third as much from it now as from any one of the others. She is a good cow.

I have refused one hundred dollars for her. Can you give, through your valuable paper, any remedy for her case? AN OLD SUBSCRIBER.

Piermont, N. H., May, 1871.

REMARKS.—Many injuries happen to cows in consequence of their being confined too closely in their stalls. When some are lying down others tread upon them, and especially upon the teats or other portions of the udder, and injure them. In some cases one or more teats are entirely ruined. In the case mentioned, it does not appear that there was any fever or swelling of the part, or any soreness to the touch, so that the cause of a cessation of the usual flow of milk is a hidden one.

Perhaps some one, having had a similar case, and found the cause and a remedy for it, will be able to inform our correspondent what that remedy is. Has the cow been overfed on meal?

BUNCH IN THROAT OF COLT.

About two years ago a lump appeared in the throat of my colt. It appears to be directly under the skin, and is about twice the size of a goose egg. It is about four inches above the brisket, and might be easily moved up to the jaw. After the colt has been exercised freely it entirely disappears, but returns as she cools down. The colt is otherwise healthy and in good flesh. Information as to cause and cure will greatly oblige

Waterbury, Vt., May, 1871. T. HOMSON.

REMARKS.—In commenting on a case which we are inclined to think may be similar to that you describe, Professor Law supposed the swelling to be caused by "distension of the sheaths of tendons, and probably rheumatic," and recommended rubbing with iodine ointment,—one part iodine to twelve of lard. Still we are so uncertain as to the similarity of cause in his case and yours, that we should advise you to consult your family physician if there is no veterinary in your neighborhood. The iodine ointment, with bandages at night, if they can be applied, may be tried with safety.

LICENSE.

Can you inform me whether the license law, so far as travelling dealers in small wares are concerned, has been revoked by the United States Government? Some of my neighbors assure me that the peddling business can now be transacted without let or hindrance; while others declare that he who sells small goods without a license is guilty of a crime second only to that of high treason. Now, I propose to exchange my farm for a peddler's pack, and leave the print of my knuckles on the front door of every house in New England. Can I do so without subjecting myself to the interference of the Federal authorities? Please answer this at your earliest convenience; for I am very anxious—finding farming a most unprofitable calling—to rub out the old score and begin anew.

Middleton, Mass., May 23, 1871. ESSECKER.

REMARKS.—You may try your knuckles as proposed on every door in the Union, and unless you offer liquor, tobacco and such, the Federal authorities will neither molest nor make you expense.

SIDE ORIFICE IN A COW'S TEAT.

I see you don't talk very encouragingly to your Topsham correspondent, who has a cow with a shaky teat. Now I propose to inform him how I cured a cow of a like trouble.

I had a valuable cow that came to the yard at night with a hole in one of her teats. After drawing the milk, I took a piece of court plaster three-fourths of an inch square (English sticking plaster would probably be better) and pressed it on nicely over the hole; then a strip of cotton cloth of about the same width, and long enough to reach around the teat, and put on a good coat of sticking plaster and pressed it firmly around the teat. It remained for a long time, was no obstruction to milking, and it was a complete success. If the hole is an old one it may be necessary to scarify or burn.

Surry, N. H., May 28, 1871. G. W.

REMARKS.—Thanks for this prompt response.

COMPARATIVE PROFITS OF CORN AND WHEAT GROWING.

I beg to say a word to your correspondent, "K. O.," and to make up a statement of figures in relation to the cost of crops of wheat and of corn. "His friend" raised 78½ bushels of corn per acre, and 36 bushels of wheat.

ACRE OF CORN.		CR.	
By 78½ bushels of corn at $1.25		$98 12	
" stover valued at		20 00	
			$118 12
		DR.	
To ploughing and manure		$18 00	
" seed		50	
" furrowing by horse and man		2 00	
" board of two men and team, hauling manure and dunging out		3 00	
" board of man and boy, planting		4 00	
" weeding and hoeing three times		14 00	
" cutting up and getting in corn		5 00	
" husking 78½ bushels		6 00	
" shelling		5 00	
			$62 50
Profit on an acre of corn			$55 62

ACRE OF WHEAT.		CR.	
By 36 bushels of wheat at $2.00		$72 00	
" 10 tons straw at K. O.'s estimate $6.00		60 00	
			$132 00
		DR.	
To ploughing and manure		$18 00	
" 2 bushels seed wheat, $2.00		4 00	
" sowing and harrowing twice		6 00	
" harvesting		6 00	
" threshing by horse power		6 00	
			$40 00
Profit on one acre of wheat			$92 00

Showing a profit of $36.38 in favor of the wheat crop per acre more than the corn crop, taking the statement of K. O.'s friend as the basis of our calculation. Both crops were certainly very creditable to the farmer, who probably did not count the cost of labor on the corn crop. It shows that it costs about the same to get 30 or 40 bushels per acre as it did 78. In the table of figures, I have endeavored to give statements that approximate the correct cost of raising both crops. They show that cultivated crops are vastly more expensive than small grains. But as K. O. has invited "criticism" and admits that I have "furnished him a text on straw," which he approves and discourses on, yet he would seem to disparage my effort to do some good by adding, "I think that is the only argument of much weight he presents for our consideration."

I did not suppose myself addressing a man of "*straw*," but the more receptive minds of those farmers of the New England States who are anxiously inquiring into the matter of growing wheat. If K. O. and your farmer readers will review the communication to which he alludes that was published in the FARMER for April 8, they will find statements of facts calculated to encourage the growth of wheat in New England, in addition to

the incidental one of the present value of straw, which it appears to me ought to have much weight with practical farmers, who find their flour money a severe tax, though they may not be worthy of consideration by K. O., or other men of straw. From all directions evidence seems to be accumulating that the impression is deepening among farmers and agricultural journals that "we can raise our own bread." Probably K. O. is yet faithless. The universal rye field may be his admiration. We do not object to this crop, but it is too late to clog or choke down the enterprise of wheat growing at the East. With the rye field we hope to see its fellow crop, the *wheat field*, on every farm. Why not?

With no view to controversy, or desire to proclaim an idea beyond my own experience and full knowledge, I feel that cavilling expressions are not of "much weight," and will be appreciated only at their true value by your many readers.

HENRY POOR.

Brooklyn, L. I., May 11, 1871.

MANAGEMENT OF HEN MANURE.

In reply to Mr. J. Fernald's inquiries in regard to the treatment of hen manure, I would say that in 1868 I took four bushels of dry hen manure, turned it on the barn floor, took a common flail and threshed it to a powder; then took twenty-five bushels of muck that had been dug eighteen months, spread it on the barn floor and thoroughly mixed it with the hen manure. A single handful of this compost was put in the hill, and the corn dropped upon it. I had a splendid field of corn. Planted one row without the compost. That row could be distinguished all through the season, being about two weeks behind the rest of the field, and finally it never did catch up with the rest.

I believe if farmers that keep from twenty to thirty hens would save all the droppings and compost it in the way as above, or in some better way, instead of buying fertilizers as many at the present day do, it would be very much more to their advantage. JOSIAH PUFFER.

Harvard, Mass., May 15, 1871.

REMARKS.—We wish to unite with Mr. Fernald in an expression of thanks to Mr. Puffer for the foregoing prompt, concise and explicit reply.

CAUSE OF WHITE SPECKS IN BUTTER.

I have ascertained that specks or curds in butter are nothing more nor less than particles of dried cream. I have tested it for five years in the following manner. In turning off the buttermilk from the butter, I drain through a sieve; then place those particles which remain in the sieve in a dash churn, or jar which I have for that purpose, and churn them into *butter*. It requires more churning than common cream. FROM A FARMER'S WIFE.

Southville, N. Y., 1871.

FATTENING A HORSE.

A horse is a great favorite with me, and I like to see one look well and used well. I will give you my idea of fattening a horse. Before cutting the hay put it in a tight box, wet with warm water and then put on your meal. I think this the quickest way to fatten a horse. Would like to have the opinion and experience of others. I think a mixture of corn, rye and oats is good for a horse.

Keene, N. H., 1871. H. V. W.

BUGGY PEAS.

You are correct as to the cause of buggy peas. Now for the remedy. The peas that grew in 1870 may be sown in 1872 without any trouble, provided they are one-fourth of a mile from where there are any sown that grew in 1871. Keeping them one summer and two winters, or eighteen months, kills the bugs. I wish your readers to try this and report the result. FARMER.

Wallingford, Vt., May 12, 1871.

DEGENERACY OF HORSES.

Horse racing was introduced at the South by some of the old Colonial Governors about one hundred and forty years ago, but for a long time horses were not run for the pecuniary value of the prize offered, but solely for the honor which the planter would secure by the reputation of breeding and training the victorious animal. A saddle and bridle, or a piece of plate, and not a purse or "premium," were the prizes then contended for.

But at the North, horse racing has never been popular. Our leading citizens have not encouraged or patronized the sports of the turf. The judges of our courts have not officiated as judges at the horse race; the men who make the laws for the government of the people do not make the laws which govern the running of horses.

We admit that within a few years past, under the plea of recognizing the importance of the horse to farmers, and of encouraging improvement in breeding, training and developing the powers of this noble animal, something like the horse race has been introduced into the programme of some of our agricultural fairs. We admit also that the influence of this innovation is already wide spread. It has excited a general ambition among farmers to breed for speed; and among the boys to run a skeleton wagon, to wear a jockey cap, and to use the language of the professional trainer.

It is some twenty-five years or more since "the track" and "trials of speed" were introduced on the grounds of our agricultural fairs, for the improvement of horses. What has been the result? A correspondent of the Monthly Report of the Department of Agriculture, in Muscatine County, Iowa, says:—

The raising of horses has been overdone here. We, as a farming class, have been crazy on the subject of speed, and are now reaping the fruits of our folly. Had we a number of years ago entered into the raising of horses for the farm instead of the turf, we would not have the comparatively worthless animals now on our hands—not fast enough to win, nor large enough to work. The majority of farmers are, however, again raising such horses as will always find ready sale. The Percheron is meeting with much favor.

Mr. W. A. Brodie, in an article written for the Rochester, N. Y., *Rural Home*, in speaking of a Percheron horse bought in June, 1870, of the Massachusetts Society for the Promotion of Agriculture, by William A. Wadsworth, remarks:—

"He is a noble animal, and just what is needed here, as working horses have greatly degenerated in this immediate vicinity."

In England it seems that the result of modern racing has been the same. The London *Army and Navy Gazette*, in speaking of horses with reference to the army, says:—

"If our present horse is well-bred, he is as a rule so light and so devoid of substance as to be unable to carry any decent weight; if he is strong, he is so coarse as to be totally devoid of the mettle or courage necessary for a charger."

Professor Ferguson, of the Veterinary Department of the Privy Council Office, Dublin, ascribes the degeneracy of horses to the modern plan of testing horses in short heats and light weights, instead of the four to sixteen miles, and heavy weights of former years, and says:—

"Of late years the distances run are short, and the weights carried but light. Horses are bred accordingly. Speed is the great desideratum; weight-carrying power is not required. As a general rule, power must be sacrificed to obtain an increase of speed."

AGRICULTURAL ITEMS.

—During April the Union Pacific Railroad sold 241,202 acres of land in Nebraska, at an average price of $4.13 per acre.

—Don't waste the soap suds, but apply them to garden, vines, bushes, evergreens or lawn. They are too valuable to be turned out at the back door.

—Elijah Nye, Esq., of Berlin, Vt., during the past season wintered ten sheep, and has had from them twenty-two lambs, twenty-one of which are now living and doing well.

—A correspondent of the Maine *Farmer* smokes the barrel instead of the hams. Turn the barrel bottom up over a pan or kettle of coals covered with corn cobs. After the barrel is well smoked inside put the hams and pickle into it, as you would before smoking.

—Joseph Harris, of Moreton Farm, near Rochester, N. Y., is ploughing up an oat stubble field, and on the advice of an English friend purposes sowing it with cole-seed and white mustard—to be fed off by sheep next fall—seeding it to clover and grass at the same time.

—If screws are warmed and dipped in melted tallow it will prevent their rusting, and they can always be unscrewed with ease. A large quantity of screws can be greased in a few minutes, and the operation is one which will ultimately result in a great saving of time and labor.

—M. J. Carter writes the *Rural New Yorker* that if those who have crib-biting horses will nail a sheep skin, wool side up, wherever there is a chance for the horse to bite, he will not do very much cribbing in the stable. His father has tried it successfully.

—The *Carolina Farmer* says to destroy the vitality of the stumps of willow trees, peel portions of the bark two or three inches broad from five or six feet up the trunk, down to the ground, in May or June, and a few months after the tree can be cut down without the annoyance of the stump suckering.

—Mrs. Smith, of Enterprise, Missouri, who took a four hundred dollar premium on cotton at the St. Louis fair, picked the cotton with her own hands. Her husband is a well-to-do farmer, and she is entirely removed from the necessity of hard work, yet she is not ashamed of it, and her industry has been handsomely rewarded.

—The *Utica Herald*, from the present condition of the dairy interest, draws the moral that no large section of country can afford to depend entirely on one kind of crop, but that each locality must aim to supply its own markets with necessaries. As the West is now manufacturing cheese and butter for itself, the *Herald* thinks the East must grow its own breadstuffs.

—The *Western Rural* recommends boiling corn on the ear for stock, and says cooking shelled corn has never given us satisfaction. There seems to be a principle contained in the cob, probably the potash, which materially assists in softening the hull in the corn, when submitted to strong and continued heat, rendering it nearly like hulled corn. The water in which it is boiled, what little remains, may be fed with the corn.

THE CURRANT WORM.

Look out for the Enemy—His Skirmishers have appeared—Prepare for the Battle.

Every person who saw the foliage of his currant bushes devoured last year, after a hard fought battle to save them, will remember how the crop of fruit was imperilled if not utterly destroyed, and what a sorry spectacle the bushes themselves presented at the close of the season. All will be desirous to find some preventive of destruction sufficiently early to save the crop both of foliage and fruit on their currant and gooseberry bushes.

Many substances were employed last year, the most effective of which seemed to be the white hellebore. It is better to use this than to lose the crop, but there are some objections to it. In the first place, it is a poisonous article, and in careless hands might be the means of much suffering, or prove fatal to human life. In a small way, in private gardens, its cost might not prove burdensome, but where currants are raised for market, it would be objectionable. Again, it is a slow, disagreeable, and tedious task to apply it to the bushes so as to prevent the ravages of the worms. The fly comes from the ground and deposits its eggs on the under sides of the leaves, and at first usually on that part of the foliage near the ground. If the hellebore is sifted on the foliage it must pass down into the centre of the bush quite freely, and cover most of the leaves, or the worms will continue

their work. We made careful use of it last year, and found it efficacious in some degree, but not a certain preventive. Carefully searching for the leaves containing eggs or worms, picking them into boxes and crushing them under the feet, accomplished more than anything else resorted to. But that process was tiresome, and to some is a disgusting one, and unless the bushes were quite vigorous, the leaves could not well be spared. Carbolic acid in solution was tried, but did not prove satisfactory. That is also poisonous, and therefore a dangerous article to have about.

The *carbolate of lime* is another article used to destroy the currant worm. It is in the form of a fine flour, has a disagreeable odor, and we should think would be quite objectionable if any portion of it should touch the fruit. Dr. E. Worcester, of Waltham, Mass., informed the Editor of the *Boston Journal of Chemistry*, that "he tried this powder in many instances last summer, and found that while it was fully as effectual as hellebore, it was less disagreeable, less costly and perfectly safe. The method of using it is to sprinkle it over the vines as soon as the worm makes its appearance. One or two applications was found sufficient. Neither the foliage nor the fruit, he stated, was injured by the carbolate of lime."

Last year the worms appeared with us on the 22d May, and continued until the first of June, though greatly reduced in numbers at the latter date. They came twice afterwards before the middle of July, but not in such force as on the first time.

The Editor of the *Canada Farmer* stated last summer, that he counted on the under side of a single leaf 221 eggs of the *Saw-fly*; the same branch had ten other leaves with about the same number of eggs on them. He thought it safe to say that from this one branch at least 2000 worms would have been produced!

In the *Religious Magazine* for March, 1871, the Rev. E. H. Sears, after relating several experiments to destroy the currant worm, which proved ineffectual, says:—

"Soon after these disastrous experiments I was on a visit to a friend who is an amateur gardener. I was surprised to find his currant bushes green and flourishing and pretty well loaded with clusters, while looking over the fence into his neighbor's garden, the bushes were stripped entirely bare. 'How in the world did you save them?' was a very natural, and in my case a very eager inquiry. Take a pound of copperas and dissolve it in seven gallons of water, and sprinkle it over the bushes with a watering pot. My bushes were getting covered with the worm, but one application dosed him effectually. I advised my neighbor over the fence to do the same, but neighbor's wife objected, fearing the copperas would poison the currants, and so he sprinkled them with lime; and you see the result. My friend found a second application necessary a few weeks later when the pest re-appeared; and the result was a large and beautiful crop of ripe currants."

As the currant is among our best fruits, we are confident that the space occupied in stating the above, will be well employed.

For the New England Farmer.

FEED FOR MILCH COWS.

Millet—Hungarian Grass—Early Cut Hay—Corn fodder, in connection with Grain and Dry Hay—Variety of Feed—Preferences of Different Animals—Estimate of Profit and Loss of a Dairy—Age of Cows Management of Cows and Calves—Product of Col. Warring's Jerseys and Natives.

In the last FARMER I see that a correspondent from Blue Hills, Mass., thinks my cows have *strange eccentricities*, because they did not seem pleased when I gave them a feeding of dried millet and Hungarian grass. He thinks he would make *beef* of such cows. I can tell him it would not take long to do that.

I finish cutting my first crop of hay about the first week of July. I feed such hay, with as much grain as I dare to, all the year round. I raise no corn fodder for winter use, nor straw of any kind; and do not have more than a ton of poor hay to feed, with thirty tons of the best early cut hay and rowen. Cows fed in that way make beef very easily. I would prefer such hay all the time, if I could raise enough of it.

But as an acre of land, well manured, will produce more feed in corn than in grass, and as grass must be renewed occasionally, I raise some corn fodder every year for feeding green in August and September. My cows never have refused to eat it, nor have they ever given a less quantity or a poorer quality of of milk while being fed on it. They get their usual ration of grain and some dry hay all through the season of feeding green corn. They like sweet corn much better than the large southern kind. Dr. Loring advises us to raise millet *instead* of corn for feeding *green*. He has been *pitched into* so many times on that subject, that I should not wonder if he hated the sight of *cornfodder* even worse than his cows do.

I raised a piece of millett and Hungarian grass last year, not expecting it would take the place of cornfodder, but as an experiment, to learn its value as a crop for soiling and for winter use. As a summer feed, I could not learn its value, for my cows would none of them eat it, if they could get anything else. I had very hard work to use up a cart

load among eight cows. And the first time I offered it dry in winter they did not seem to like it, but after a few days they ate it better, and before it was all fed out some of them ate it as well as English hay.

I think all animals like some change in their feed, and different animals like different kinds of food. Some cows eat coarse hay best, while others prefer fine. I found my young cattle and dry cows ate the millett better than those that were giving milk. I shall try to raise a larger field of it this year for winter feeding. It grows quick, and can be grown after it is too late for corn. So much grass was killed last summer by the drought that an extra effort must be made this year to raise forage crops or the cows will be hungry next winter.

I do not wish to be understood as opposed to millett or Hungarian grass. I believe them both very valuable crops to raise on certain kinds of land, and for putting in after it is too late for corn.

Mr. Charles Smith, of Attleboro, raised a very good piece of Hungarian grass last summer on green sward turned over after taking off a crop of hay. I hope to do the same this summer.

Last fall I sowed a piece of rye to be cut and fed green this spring. It was put in after early potatoes, and although the season was dry it made such a growth that it had to be mowed to prevent it from smothering in the winter. On the 8th of this month (May), it had begun to show its heads, and I commenced cutting and feeding it to all my stock, young and old. They all took to it at first, and still seem to like it as well as anything I ever feed. And the cows in milk have increased their quantity wonderfully. I only wish the field had been four times as large. I shall try rye on a larger scale another year for soiling. I suppose it will get too hard before long, but I think by sowing it at two or three different times from the first of September to the last of October, it might be made to last four or five weeks; and it comes when no other green food can be had. Orchard grass on rich moist land can be cut before the first of June, and if rye can be fed through the whole of May it will make the winter seem shorter than if only hay is fed from fall till new grass comes.

Ever since I have had the management of farm stock, I have kept more or less definite accounts; enough at least to allow of making very *close guesses* at the profit or loss. I find it impossible to keep exact accounts with dairy stock. I can buy a pig for $10, feed him $10 worth of meal and sell him for $25 and know that I have made a profit of $5, allowing the value of the manure to be equal to the cost of labor of taking care of him.

Cows are not bought and sold at the beginning and end of each trial, but an *estimate* must be made of their value at each end of the year. Allowance must be made for growth, if any, and also for the condition of the cow, whether farrow, dry, or fresh with calf,—all of which require considerable guessing.

I believe this is the first year I have ever kept a stock of cows without making either purchases or sales, or having some farrow ones among them. This year, ending March 31, 1871, I have had just eight cows and heifers, that have all had calves within the year. I have had them come in at different times, so that I could make about the same quantity of butter each month through the year. Four of the number were from four to ten years old. The other four were two-year-old heifers with their first calves.

Two calves were fatted for veal, four were raised, and the others killed when a day or two old. Those which were raised had new milk two or three weeks, and then milk skimmed at twelve hours old for two or three weeks longer.

I should not have thought of making these statements had I not seen in the March number of the *Agriculturist*, Col. Warring's account with his *Jersey* cows for the past year. He says "he has bought and sold a number, so that he cannot give an exact average, but the amount of butter made will not be less than 200 pounds for each cow of *full age;* and he is willing to compare their produce with that of any *native* herd with which he is acquainted."

By looking over my books I find that I have *sold* during the year 1534 pounds of butter from my eight *natives*, four of which were two-year-old heifers. I have also sold one quart of new milk every day, and all the night's milk skimmed at twelve hours old one day in every week, and during the winter months the morning milk has been sold new one day in a week. This does not include the milk, cream or butter, used in a family of from three to four persons, which would have carried the amount of butter made considerably above two hundred pounds per cow, and this from *natives*, grades, or *scrubs*, as some call them, and half the number only two years old at that.

What the *full age* of a cow is I do not know. Mine are all under seven except one, and she is giving now at eleven years, two or three quarts more than she ever did before. She is giving at this time eighteen quarts per day. When they all get to maturity I shall hope to show still better results.

A. W. CHEEVER,

Sheldonville, Mass., May, 1871.

For the New England Farmer.

HEAVY MANURING.

In an article of mine, published in the FARMER some weeks since, I used the term "*heavily manured*," in speaking of a field prepared for corn.

A correspondent of yours, J. H., of Shrews-

bury, thinks the term very indefinite. I concede that it is so, and that it was meant to be, because of the fact that but few are inclined to use manure with the profusion that corn will pay for in increased production.

If I had gone into particulars and told of the practice of good farmers in the town where the crop referred to was raised, either my veracity or the wisdom of such *heavy manuring* might have been questioned.

Notwithstanding J. H. thinks twenty-five loads of good manure to the acre the limit of profitable application for a corn crop, I can assure him that in some localities I am familiar with, it is but a fraction of the amount considered desirable and *profitable* to use on what is regarded as strong dark loam.

It has been a general practice to put on from forty to forty-six cords of good sea muck, consisting of rockweed, mosses and kelp, to the acre. This is turned under the sward or stubble. After the ploughing, from fifty to seventy-five barrels of fish were put on the surface, with some manure in the hills. The seaweed is worth as much a cord as the average of the manure taken from the stables in Boston. Much of it is as valuable as any known manure. A crop of oats usually follows the corn, and the same manuring is repeated on the stubble for another crop of corn and grain with hay seed, which completes the rotation and gives a good condition of soil for five or six years' hay crop, usually large enough without any top dressing.

I think it is very difficult to put on too much manure for a corn crop. It is a ravenous feeder, and I never saw the manure too profuse for it unless it was put in the hill—always a questionable practice, the wisdom of which but few are willing to endorse. It is too much like *rum* strength for man.

It is a question of much magnitude with every farmer as to how much manure he can afford to use to the acre. He cannot afford to raise small crops, for in so doing he wastes his manure and labor also. It is found true that the man who manures *very* liberally is the man who succeeds in making money by farming; and that he who furnishes insufficient food for his crops is in a fair way to be short fed himself.

Every prudent farmer will give this subject much consideration, especially if he takes the above view of it, and regards "manure as the mother of the meal chest," as the Scotch saying has it. We may consider it as *heavy manuring* when we have done so to the extent of our capacity in order to secure the best results for our outlay.

When we take into consideration the high cost of labor, and the inadequate return the farmer obtains for the products of that labor, every reflecting man must see that he cannot afford to employ labor unless he can in some way secure a supply of manure sufficiently large to ensure what is usually termed *large* crops. These and these only will pay his labor.

It costs as much to cultivate a small crop of corn, aside from the cost of the difference in the quantity of manure used, as it does to cultivate a large one. K. O.

May 12, 1871.

RAISING CALVES AT AN AGRICULTURAL COLLEGE.

The London *Milk Journal* tells how stock is raised at Hohenheim. The rules laid down at this great agricultural college are, that it is best to rear calves entirely by hand so as to have less trouble with both the cow and the offspring, and the quality and amount of food must be regulated as follows:

1st week, daily,	12 lbs. milk.	0 lbs. oatmeal.	0 lbs. fine hay.
2d "	" 16	" 0	" 0	"
3d "	" 20	" 0	" 0	"
4th "	" 22	" 0	" 0	"
5th to 7th	" 22	" ½	" ½	"
8th week	" 21	" ½	" ½	"
9th "	" 20	" 1	" 1	"
10th "	" 16	" 2	" 3	"
11th "	" 12	" 2	" 6	"
12th "	" 8	" 2	" 10	"
13th "	" 4	" 3	" 10	"

In the ninth week, the milk is first mixed with water, and a little fine oatmeal. The meal is afterward mixed with the dry fodder. After three months the milk is withheld, and then the young animals receive daily, till two and a half years old, from twenty to twenty-two pounds of hay, or its equivalent. But the calves never after receive, even in summer, any dry food till they are nine months old. The average feeding is so divided that the younger portion receive less, the older more, till two and a half years, when they begin to receive the regular rations of the older cattle, including the grain fodder, as indicated above. The growth with this treatment is so remarkable, that it is only a little surpassed by the rapidly maturing short-horns.

	Heifers.	Bulls.
Average weight of calves at 3 months	233 lbs.	353 lbs.
" " " 6 "	351	472
" " " 1 year	640	760
" " " 2 "	1184	1300
Daily increase of calves	1.5	1.8
" " in second year . . .	1.4	1.5

The college whose management of young stock is given above by the *Milk Journal*, was established in 1818, by King William, on the Roville estate in Hohenheim, Wurtemberg. Like all the other similar institutions in the country, it is distinguished for its excellent management and practical results. All the agricultural schools in Germany are sustained and directed by the government. At Hohenheim, forty courses are given during the term, comprising agricultural matters, forest matters and kindred sciences. It has from 125 to 150 students at a time, and its graduates must now number some 2000 or more. Professor Hitchcock says that nowhere in Europe can there be found a better model agricultural and scientific school. It comprises a farm of 825 acres, a forest of 5,000 acres, a botanic gar-

dun, a library; geological, mineralogical and botanical collections; also collections of woods, seeds and resins from the forest; collections of comparative anatomy, wool, agricultural products, models of instruments of tillage, instruments for surveying and physical science, and a well appointed chemical laboratory. It may be called the model agricultural college of the world, and as such, its mode of rearing young stock cannot fail to be of interest to our farmers.—*Utica Herald.*

MOISTURE FOR GARDEN CROPS.

It seems to me that far too little attention is given to the importance of moisture in proper quantities for the rapid and healthy growth of vegetables. In general, our lands are subject to periodical floods, alternating with severe dought, and unless very favorably situated as regards both drainage and retention of moisture, cannot produce the best results.

The plains of Arlington in Middlesex county, owe their celebrity as the garden of Massachusetts, quite as much to their peculiar situation in regard to moisture, as to any other circumstance; the soil of these plains is mostly a very fine sandy loam, resting on a subsoil of very fine sharp sand, not naturally rich soil, but capable, under the high manuring and great skill of the farmers, of producing most wonderful crops, except in some places where too elevated above the water level; the best of this plain land is only two to six or eight feet above the permanent water leval of Spy Pond; the lower parts have been tile drained in some cases, and the subsoil is so very fine that it constantly soaks up the water from below like a sponge, giving a luxurious growth to vegetation in time of drought, seldom to be seen elsewhere. These plains will generally produce a good crop of celery after early onions, cabbage, lettuce, &c. During the severe drought of last summer, some of the celery on the higher parts suffered much, but on the lower and underdrained portions, the crop was remarkably fine, and sold at great prices in consequence of the failure of the highlands. Some of the farmers of the lowlands informed me that they were obliged to run a one-horse roller between the rows in order to pack the surface after cultivating, and to prevent excessive evaporation from the scorching winds which prevailed. In this way they produced a splendid crop of celery without watering.

Farming land of this character has been lately sold for farming purposes at $1000 per acre, distant 5½ miles from Boston market. The fineness of the subsoil, together with the nearness to permanent water level, constitute the great value of these lands. A soil equally good to all appearance, but having a subsoil of coarse gravel, would be much inferior. There is an opinion prevalent among many writers, that land constantly tilled will withstand the effects of drought better than when not tilled; very possibly this may be true, but the Arlington gardeners generally prefer to run a roller after the cultivator and hoe in time of severe drought, thinking that the excessive evaporation from a loose surface is thus checked, and the roots kept moist. So far as I know, this practice is not general in any other neighborhood.—*W. D. Philbrick, Middlesex Co., Mass., in Country Gent.*

TO REMOVE THE TASTE OF WOOD.—A new keg, churn, bucket, or other wooden vessel, will generally communicate a disagreeable taste to anything that is put into it. To prevent this inconvenience, scald the vessel well with boiling water, letting the water remain in it until cold; then dissolve some pearlash or soda in lukewarm water, adding a little lime to it. Wash the inside of the vessel well with this solution. Afterward scald it well with hot water, and rinse with cold water before you use it. The reason for this is the ready combination of resinous matter with alkalies to form compounds soluble in alcohol.

Ladies' Department.

THE OLD ARM CHAIR.

BY ELIZA COOK.

I love it, I love it, and who shall dare
To chide me for loving that Old Arm Chair?
I've treasured it long as a holy prize,
I've bedewed it with tears, and embalmed it with sighs.
'Tis filled with memories of days gone by,
Would you learn the spell? a mother sat there,
And a sacred thing is that Old Arm Chair.

In childhood's hour I lingered near
That hallowed spot with listening ear;
And gentle the words that mother would give,
To fit me to die, to teach me to live.
She told me ill would never betide—
With truth for my creed, and God for my guide:
She taught me to lisp my earliest prayer,
As I knelt beside that Old Arm Chair!

I sat and watched her many a day
When her eyes grew dim and her locks were gray;
And I almost worshipped her when she smiled,
And turned from her Bible to bless her child.
Years rolled on, the last one sped.
I learned how much the heart can bear
When I saw her die in that Old Arm Chair.

'Tis past—'tis past, but I gaze on it now
With quivering breath and throbbing brow;
'Twas there she nursed me, 'twas there she died,
And memory flows with lava tide.
Say it is folly, and deem me weak,
While the scalding drops start down my cheek—
But I love it, I love it, and cannot tear
My soul from that mother's Old Arm Chair.

SUMMER DRINKS.

In the *Galaxy* Nebulæ we find the following advice as to summer drinks:—

The return of the warm season naturally brings to mind various preparations for hot weather. One of these our countrymen and countrywomen have always strangely neglected—the preparation of

cooling, non-vivacious beverages. While in "mixed drinks," containing some form of spirit, we probably take the lead of the world, our temperance tipplers show a strange poverty of invention. The only habitual sherbet is lemonade, the least delicate of them all, and moreover containing an acid which disagrees with many persons. Orangeade, so much superior to it, is rarely seen; raspberry and strawberry sherbets never. The difficulty of obtaining these fruits except during a very short season may have something to do with the want; but then there is orgeat, the most cooling and healthy of summer drinks; who drinks orgeat? in how many American towns can you get it? Simpler than all is *eau sucree*. We laugh at the French for drinking *eau sucree*, and think it must be insipid, but French sugared water is not insipid; it is redeemed from that quality by the judicious insertion of five or six drops of orange-flower water. The swells of the Grand Opera and the Italians used to take it regularly between the acts, instead of heating their brains with cocktails, or filling their stomachs with superfluous gas and spoiling their digestions through the medium of, syrup and artificial mineral water.

THE PHILOSOPHY OF FRYING

The object of all cooking is to bring about those chemical changes in the articles of food which nature everywhere produces, in vegetable and animal substances, when exposed to the influence of heat. Baking, frying, boiling, or roasting are all only so many different methods of applying heat. The commonest, the most convenient, the cheapest, and quickest of these methods is frying, which can be applied to almost all articles of food, which requires the least apparatus and the smallest fire; yet of all methods it is the least one understood, the one which destroys most food, and is the cause of more indigestion and dyspepsia than all the other methods combined. The reason of this is that in many substances the admixture of fat prevents the chemical processes of cooking from having their proper development. The perfection of frying would be to have the food fried without coming into contact with the fat at all. But as this is, of course, a self-evident impossibility, the next best thing is to have the food come into contact with the fat as little as possible. This is accomplished simply by having the fat *hot*. Grease of any description is capable of being heated to a very much higher temperature than water, in fact it can be made almost three times as hot as boiling water. When fat is at its boiling point it is so hot that any article of food brought into contact with it is actually burnt, and this is precisely the reason why, for purposes of frying, fat should always be boiling hot. For any article of food, a doughnut, for example, dipped into boiling fat is immediately covered all over by a thin crust of burnt doughnut, which prevents the fat from penetrating further in, and enables the rest of the doughnut to be exposed to a greater degree of heat than can be applied to it by any other process, without coming in contact with the fat, and the natural chemical processes go on inside with a greater vivacity and to a greater degree of perfection than can be obtained by any other method. Perfect frying is the perfection of cooking, but so soon as the fat is not sufficiently hot to create the burnt crust around the article fried, then the fat penetrates it and absolutely prevents cooking from taking place at all. If the fat is not boiling, bubbling hot, the process that takes place is not cooking, but simply drenching the food with a tepid fat, and rendering it totally indigestible. It makes no difference how hot the fat is made afterward, the mischief is done the moment the fat penetrates inside. All perfectly fried food has a thin, crisp, brown outside crust, which has in itself a pleasant, relishing taste,) and is perfectly free from even the suspicion of fat inside, except what was intentionally put there by the cook. All housekeepers know that to fry well their fat should be hot. But they do not attend to it half as scrupulously as they would if they understood the true philosophy of it. Boiling, bubbling, hot fat cannot penetrate anything, and cooks to perfection, tepid fat penetrates everywhere and does not cook at all, but actually prevents cooking. Any housekeeper who reads this, and chooses to profit by it, need never put any greasy, fried, half-cooked and indigestible food upon her table. The whole secret consists in having the fat *boiling hot before the things are put in*. There is one other condition which follows naturally from this first one, but which is almost invariably lost sight of even by good cooks, and that is that the fat should entirely cover the article to be fried. The reason of this is, that the part not at once covered by the fat remains cold, cools off the fat near it, and then absorbs the tepid fat just the same as if it had never been hot. Frying pans should be deep, well filled, and heated to the boiling point, and then it is easy to turn out fried food crisp, brown, and dry on the outside, and perfectly soft, moist, and well cooked within. It is a peculiarity of the outside crust of things fried in boiling fat that the fat itself drips off from it as readily as water; hence, well fried articles are neither greasy in appearance, nor very greasy in reality. Frying ought to be as easy as boiling.—*Christian Union*.

IDLE-GIRLS.—It is a painful spectacle in families where the mother is the drudge, to see the daughters, elegantly dressed, reclining at their ease with their drawing, their reading, beguiling themselves of the lapse of hours, days and weeks, and never dreaming of their responsibilities, but, as a necessary consequence of neglect of duty, growing weary of their useless lives, laying hold of every newly invented stimulant to rouse their drooping energies, and blaming their fate, when they dare not blame their God, for having placed them where they are. These individuals will often tell you, with an air of affected compassion, (for who can believe it real,) that poor, dear mamma is working herself to death; yet no sooner do you propose that they should assist her than they declare she is quite in her element; in short, that she never would be happy if she had only half so much to do.

CODE OF DRESS.

The writer of "Home and Society" in *Scribner's Monthly* for June, among other things, gives this code of dress:

This code, worthy to be engraved on tables of dress, runs somewhat after this wise:

Imprimis. The first instinct about a new fashion is the true one. Don't wait till your eye has lost its accuracy and your judgement its edge. Subject the thing at once to the general rule, and bow to the decision.

2d. What suits one person does not suit another. Know thyself.

3d. Dress should supplement good points and correct bad ones. Thick and thin, long and short, are not all to be subjected to one Procrustean style.

4th. Colors should be harmonious, should be massed, should be becoming. *Id est*, many little points or blotches of color sprinkled over a costume produce a disagreeably pied and speckled effect, as of a monstrous robin's egg, or a plum-pudding. One tint should prevail, relieved by a contrasting tint. No amount of fashionable prestige can en-

able an unbecoming color becoming. "Nile green" will turn some people into oranges, though twenty empresses ordain its adoption.

5th. Lines should be continuous, graceful, and feminine. It is better to look like a woman (if you happen to be one) than like anything else—even a fashion plate!

6th. Ornament must be subordinate. Nature, with all her profusion, never forgets this fundamental law.

7th. Above all things be neat. Dainty precision and freshness is essential to a woman as a flower.

8th. Individuality is the rarest and the cheapest thing in the world.

9th, and lastly. "Stylish" is of all the words in the English language the most deadly. It has slain its thousands.

CHANGING THE COLORS OF FLOWERS.—An English paper describes a case of a yellow primrose which, when planted in a rich soil, had the flowers changed to a brilliant purple. It also says that charcoal adds great brilliancy to the colors of dahlias, roses and petunias; carbonate of soda reddens pink hyacinths, and phosphate of soda changes the colors of many plants.

DOMESTIC RECEIPTS.

RECEIPTS FOR A TEA PARTY.—In reply to a correspondent of the *Country Gentleman*, who wishes directions for preparing tea for a small party, "Daisy Eyebright" suggests the following:

ROLLED JELLY CAKE.—One cup of sugar: one tablespoonful of butter; one and a half cups of flour; two-thirds of a cup of milk; one egg; two measures of Professor Horsford's baking powder or one teaspoonful of cream tartar; half of a teaspoonful of saleratus. Bake in a dripping pan, and when done, spread over with a thin coat of jelly. Cut the sheet into strips three or four inches wide, roll up. Mock cream can be used instead of jelly, made thus: Beat together one egg, one teaspoonful of corn starch, one teaspoonful of wheat flour, and two of sugar. Boil half a pint of milk, and stir in the mixture rapidly, not letting the egg curdle. Boil ten or fifteen minutes, remove from the fire, and add a teaspoonful of vanilla, lemon or almond.

WHITE MOUNTAIN CAKE.—One pound of flour and one pound of sugar, both sifted; one-half pound of butter; six eggs—whites of three excepted—whites and yolks beaten separately; one cup of milk; one small teaspoonful of saleratus; two of cream tartar, or two measures of Prof. Horsford's baking powder. Flavor with almond, lemon or vanilla extract—one teaspoonful of either kind. Bake in four jelly-cake tins. For frosting, take the whites of the three eggs left from the cake, beat to a stiff froth; add ten heaping tablespoonfuls of sifted sugar and one teaspoonful of corn starch; beat well. Add the juice of one lemon or half a teaspoonful of sharp vinegar. Frost between each two cakes and all over them, making a white mountain. The frosting can be flavored with the same essence used for the cake. This cake lasts fresh for some time.

RICE WAFFLES.—Delicious.—Take one quart of sweet milk, two coffee cups of boiled rice, and three-quarters of a cup of wheat flour; warm the milk; stir in the above named articles; add half a teacup of home-made yeast, two tablespoonfuls of distillery yeast, and half a teaspoonful of salt. Make at twelve o'clock to use for tea at six. Set in a warm place. When ready to cook, add two eggs well beaten. Bake in waffle irons.

LEMON CAKE.—One cup of butter, warmed; three of powdered sugar; five eggs, yolks and whites beaten separately; one teaspoonful of saleratus dissolved in one cup of milk; four cups of sifted flour; grated peel of one lemon. Add the juice just before putting the cake into pans.

PUFFS FOR TEA.—One quart of sweet milk, one quart of sifted wheat flour, four eggs well beaten, two tablespoonfuls of melted butter, two tablespoonfuls of sifted sugar, half a teaspoonful of salt. Bake in brown ware cups, from twenty-five minutes to half an hour, in a brisk oven.

SUGAR JUMBLES.—Six cups of wheat flour sifted; two of sugar ditto; one of butter, warmed; one of sour milk; one teaspoon of saleratus stirred into milk. Roll out with flour enough to make thin; cut a hole in the centre, and sift sugar all over the cakes. Bake on flat tins, from twenty minutes to half an hour.

POTATO PASTE FOR DUMPLINGS.—Boil three large white potatoes until soft; peel and mash them. When quite smooth, mix with one quart of sifted flour and a scant pint of lard; salt to taste. Roll out and use for dumplings; or it makes a good paste for meat pies.

BONELESS CHICKEN.—Fricassee your chicken, taking care to brown the skin nicely; season to taste. When done set by to cool; then remove all the bones; put back into the dish in which it was cooked. Take a chopping knife and chop finely, leaving in all the oil of the fowl; if not enough of that, add a piece of butter. Then pack closely in a dish, as you wish it to go to table, and when your friends come to taste it, my word for it, their approbation will more than repay you for the little extra trouble it has taken to prepare it.—*Country Gentleman.*